



Science Busking & Creative Science Toy Making Programmes @BGPS

Briefing for Parents and Students

1 April 2024



Note: These slides will be uploaded onto the school website after this briefing.



EMPOWER@BGPS

Empowered Learners,
Persons of Strength & Character



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Our Presenters



Ms Elissa Chew
Creative Science Toy Making IC



Mrs Ng Yen Nee
Creative Science Busking IC

Sharing segments

Science School-Based Programmes Objectives (CSTM & CSB@BGPS)

Timelines for CSTM & CSB @BGPS

Creative Science Toy Making, CSTM@BGPS

Creative Science Busking, CSB@BGPS

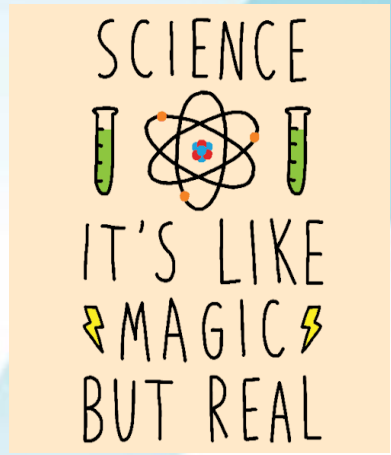
Sony Creative Toy & Science Buskers Competitions (Science Centre Singapore)

Hands-on session: Creative Science Toy Making



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Objectives of School-Based Science Programmes



Enrich and Excel

1. Build on students' interest and spark their curiosity and talents in Science
2. Allow students to learn and apply scientific concepts, knowledge and skills beyond the classroom through toy-making and/or busking
3. Provide a platform for students to showcase their talents and creativity, thereby developing their self-confidence
4. Challenge students to participate in external competitions



Timeline for School-Based Science Programmes



Creative Science
Busking @BGPS

June holidays
Improve

Term 2 Week 5

Virtual workshop by
SSC for participants

Term 3 Week 2

Audition at Science
Centre Singapore

Now

Sign up &
mentoring begins

20 - 23 May

Showcase for registered teams
during Science FUNtastic Week



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Timeline for School-Based Science Programmes



Creative Science Toy Making @BGPS

May

Submit prototype toy to FT (P1 & P2)/Science Teachers (P3 to P5)

Now Start



20 - 23 May
Showcase for selected prototype toys during Science FUNtastic Week



June holidays
Improve selected toys



Early July

Submission of selected toys to Science Centre Singapore

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School-Based Science Programmes

Science Busking		Creative Science Toy Making	
Interested P3 to P5 students		Interested P1 to P5 students	
Week	Activity	Week	Activity
T2W2-3	SLS lesson & Interest Registration	T2W3	SLS lesson & Interest Registration
T2W3 onwards	Mentoring sessions	T2W3-7	Toy making prototype
T2W5	SSC virtual workshop for participants	T2W9	Prototype submission
T2W10	Recess Showcase & Feedback	T2W10	Recess Showcase & Feedback
June hols	Modify and improve	June hols	Modify and improve
T3W2-3	Audition at SSC	T3W3	Final submission to Science teachers



Science Buskers

By Science Centre Singapore

Organised by:



Sponsored by:



Supported by:



What is Science Busking?

- Science Busking is an effective way of communicating Science
- It takes live demonstrations and interpretations to people.
- It is very live, interactive and can be very rewarding!

Participants will present and do a Show-and-Tell on any science topic. Busking and judging will be based on judges' criteria and public voting.



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Science Buskers (Science Centre Singapore)

Who can participate?

- Anyone aged 7 years old and above
- Individual or a team of up to 3 members

Categories

- Primary / Secondary / Tertiary / Open

What to prepare?

- Up to 5 minutes of LIVE busking + 5 minutes of Q&A

Competition website

- <https://www.science.edu.sg/whats-on/competitions/singapore-science-buskers>



Judging Criteria

Score	Judging Criteria
35%	<p><u>Science Communication</u></p> <ul style="list-style-type: none">• Explanations of demonstrations shown must be scientifically accurate, and use scientifically precise and correct language without overwhelming the audience with jargon.• Ability to explain science concepts in everyday language without compromising on the science accuracy
35%	<p><u>Showmanship</u></p> <ul style="list-style-type: none">• Ability to engage, interest and excite the audience• Ability to express the 'wow' factor in the busking• Ability to make the audience feel inspired and walk away with the feeling that they have learnt something
30%	<p><u>Setup, Costume, Overall look and feel</u></p> <ul style="list-style-type: none">• Creative and innovative ways of showcasing demonstrations• Blending of the look & feel with the science concepts presented• Creative booth design concepts

FAQs

Q: Can pre-recorded videos be shown during the auditions?

A: No, all forms of pre-recorded videos will not be allowed to be shown to the judges during the auditions. Singapore Science Buskers auditions will be mainly focused on the participants' live performance and interaction with our judges.

Q: Can we cover multiple topics or only one?

A: You can cover multiple topics, but please keep your busking within 5 minutes.



FAQs

Q: Are teams allowed to use portable microphones for their auditions?

A: No, teams are not allowed to use portable microphones. Judges will be close to them to hear their performances.

Q: Is the usage of fire in any form allowed?

A: No, anything that deals with the usage of fire should be avoided. No open flames (including candles, Bunsen burner) or flammable gases are allowed. You are allowed to use an induction cooker to heat things.



! Safety Guidelines !

No Liquid Nitrogen



Gloves are a **MUST**

Please put on gloves when handling dry ice and chemicals.



No Open Flame or Flammable Gases

Fire is a potential danger for everyone



Use of tools or gadgets akin to assault weapons is prohibited



ONLY over-the-counter chemicals/materials are allowed

Please **DO NOT** use dangerous/hazardous materials and chemicals



Max **3%** Hydrogen Peroxide allowed

A maximum concentration of 3% for Hydrogen Peroxide is allowed. It is dangerous for students to handle more than that



P009

The Densityer

Bedok Green Primary



Some Tips for Science Busking

You need to put in effort to create a Science demonstration that:

- is interesting and surprises people
- uses readily-available materials found in the house / Sci Lab that can be repeated easily
- has process and/or results that can be clearly observed
- has a high chance of succeeding every time

Make the scientific terms simple for all to understand as Science busking is for everyone of all ages to learn.



Some Tips for Science Busking

- If the experiment doesn't work sometimes, don't give up.
- The 'failed' process is what makes learning fun! Show the judges how creative you are with your recovery!
- Practise many times and pre-empt possible hiccups or try the experiment using different materials to see if it still works the same way.
- Create your own stage personality and style. Your strong interest in Science Busking and your own demo will shine throughout your performance and leave a lasting impression on the judges' minds.



Mentoring and Practice

Magical Scientists ☆ 📁 🌐

File Edit View Insert Format Tools Extensions Help

100% Title Lobster 26 B I U A

HOW COCO A POWDER TURNS FROM WET TO DRY IN AN INSTANT!

ALL: GOOD MORNING EVERYONE

SY: OUR TEAM CODE IS P-062

ALL: AND WE ARE THE MAGICAL SCIENTISTS!

JL: I AM JULIENNE

SY: I AM SWEE YIN

JK: I AM JESLYN

ALL: AND WE ARE EDM





**Sony Creative
Science
Award 2024**



**Sony
Creative
Science Award**

Sony Creative Science Award 2024



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Objectives of SCSA



- X**-multiplier, x-factor, multi-disciplinary, x-tradinary
- C**ultivate hands-on abilities
- I**nspire creativity from a young age
- T**ransform science concepts or ideas into fascinating toys
- E**ncourage entrepreneurial skills
- D**iscover joy of learning through creation of toys!

X-cited



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SONY Creative Science Award (Science Centre Singapore)



Junior WhizKid
(Primary 1 to 2)

WhizKid
(Primary 3 to 6)



IGNITING
Fun, Creativity, & Innovation

Sony Creative Science Award 2024

STUDENTS	
JUNIOR WHIZKID	
Commendation Prize \$150 Sony voucher	Merit Prize \$100 Sony voucher
WHIZKID	
1 st Prize \$1,000 Sony voucher	3 rd Prize \$300 Sony voucher
2 nd Prize \$600 Sony voucher	Commendation Prize \$150 Sony voucher
	Merit Prize \$100 Sony voucher

Come participate in Singapore's largest toy competition, Sony Creative Science Award (SCSA)! Put on your thinking cap, innovate and explore, and wow the judges with your most creative toy invention!

FIND A FRIEND TO PARTICIPATE AS A TEAM OF TWO OR SIMPLY TAKE PART AS AN INDIVIDUAL!

- JUNIOR WHIZKID CATEGORY**
For Primary 1 & 2 students. You have to create any toy using "Jump and Surprise" Idea. Submit a photo of you showing how you create the toy.
- WHIZKID CATEGORY**
For Primary 3 to 6 students. You have to submit any creative toy invention that demonstrates scientific concepts. Submit a journal of your toy-making process.

FINAL JUDGING ROUND
Shortlisted students will present their toys to the judging panel and participate in an on-site hands-on challenge.

SCHOOLS
Schools producing the top three winners (individual/team) in Whizkid category will receive up to \$1,000 and a certificate.
Schools producing the most number of shortlisted toys for each category will receive \$1,000 and a certificate.

REGISTER BY 15 JULY 2024
For privacy statements and more information on how to register, visit www.science.edu.sg/scca. Email: upstream@science.edu.sg

JOINTLY ORGANISED BY: **SONY**, **SCIENCE CENTRE SINGAPORE**, **MINISTRY OF EDUCATION**

SONY Creative Science Award (Science Centre Singapore)



Theme for Junior WhizKid: P1-P2

To use the theme "*Jump and Surprise*" as a functional component in their creation and not a decorative component.



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SONY Creative Science Award (Science Centre Singapore)



(No Theme) WhizKid: P3-P6

To create a toy that demonstrates
scientific concepts creatively.

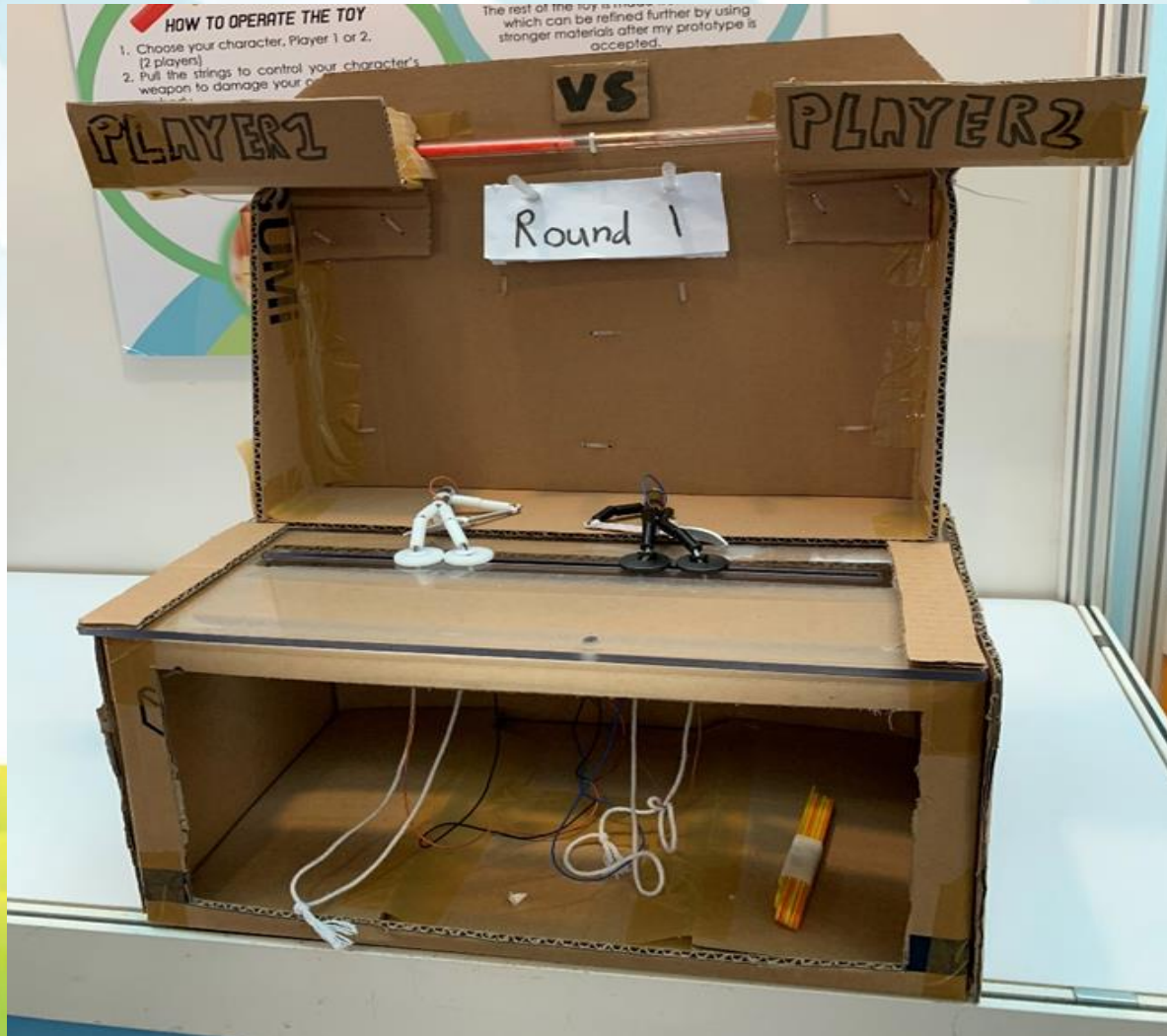


Student used the concept of magnets to create a magnetic field to make a magnetic shooter.



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Winner of the WhizKid Category in 2018 (Stickman Fight from BGPs)



SCIENCE CONCEPTS

The weapon of the character is connected to a source of power – batteries. Upon touching the opponent's body or head, it forms a closed circuit. Electrical current flows through the weapon in the circuit connected to the opponent's body and the motor. The motor then turns, pulling a string attached to the 'health bar', decreasing it.

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are m

Winner of the WhizKid Category in 2019 (Lenz Chess from BGPS)



LENZ CHESS

By Leanna Yong, P6 - RSL

<h3 style="background-color: #90EE90; border: 1px solid black; padding: 2px;">My Inspiration & Description</h3> <p>Lenz Chess is inspired by my 8th birthday when I had a science-themed birthday party. I also had a Lenz Law game where people would see which pipe would be the slowest for the magnet to take to fall. My family and I love to play board games, so it was fun to make the rules for the game.</p>	<h3 style="background-color: #90EE90; border: 1px solid black; padding: 2px;">Science Concepts</h3> <p>* Magnets Like poles repel and unlike poles attract.</p> <p>* Lenz Law Magnets will slow down in a tube made out of a diamagnetic material like copper. When a magnet goes down the copper tube, it slows down because the electricity makes a current that creates a magnetic force that opposes the magnet. Hence, it slows down the falling magnet.</p>
<h3 style="background-color: #90EE90; border: 1px solid black; padding: 2px;">How It Was Made</h3> <p>I used:</p> <ul style="list-style-type: none"> • A saw to cut the poles using a mitre saw. • A pipe cutter for the copper/acrylic tube. • A bench drill for drilling the holes for the poles in the wood. • Ring magnets • Sink washes to protect the magnets. • Rolled up paper to push up the magnets so that Lenz law could work. 	<h3 style="background-color: #90EE90; border: 1px solid black; padding: 2px;">How to Play!</h3> <p>How to win: Move across from the starting to the opposite side of the board, the first one wins!</p> <p>Setup: The youngest player starts as the attacker while the other player will be the defender. The defender will put the magnets on the wooden sticks on the board strategically. Set the magnet on top of the starting piece.</p> <p>Game Play Step 1: Attacker The attacker will take the copper tube and lower it to the point where the magnet is. Using Lenz law, the attacker can tilt the copper tube horizontally if needed and choose any side to put the magnet down in any adjacent square. If the magnet attracts to the magnet on the wooden stick, you LOSE! If it repels, you are still in the game.</p> <p>Step 2: Defender The defender can flip two of the magnets on the wooden sticks that are adjacent to the magnet, changing the poles of the magnet. The colours of the magnet can show the change of poles, blue for the North Pole and red for the South Pole.</p> <p>Step 3: Repeat Step 1 & 2 Play until the attacker wins or loses. Then, switch roles and try again.</p>

小四生因担心鸟窝被打落设计“救鸟蛋”游戏获奖

杨源争 报道
yong@bgps.com.sg

在数学国家馆中，亚历山大小学四年级学生杨源争（10岁）看到树上的鸟窝，当时觉得它的位置很容易被人打破。他萌生了一个想法，于是突发奇想，创造了一个解救鸟窝的游戏。

他的作品“解救鸟窝行动”（Eggs Rescue）在今年荣获创意科学奖（Sony Creative Science Award）获得“WhizKid组别”的第三名。

这项比赛是全国规模最大的科技创意比赛，今年收到超过4300份作品，参赛者来自87所小学，共5500名小学生。比赛的目标是让小学生通过设计与制造玩具来展现他们的创造力。

杨源争在父母的帮助下完成作品。“我鸟窝很容易被打到，所以我想做一个解救鸟窝的游戏。”他的设计采用滑轮系统，通过两个小轮盘移动磁子，再将磁子吸引到磁球送到最高的洞口，途中避免其他人回口才算“解救”成功。

杨源争设计的游戏采用滑轮系统操作，通过两个小轮盘移动磁子，再将磁子吸引到磁球送到最高的洞口，解救任务才算完成。（杨源争提供）

颁奖嘉总长兼副部长兼财政部及教育部第二部长英兰妮在致辞时说，学习不应只限于课本或书本，而这个比赛让学生在生活中运用学到的科学知识。

今年“WhizKid组别”的冠军作品以磁铁和铜管做棋子，并依据磁原理下棋。玩家必须用铜管吸引磁铁来移动位置。

这个名为“Lenz Play Chess”的作品由有着小学六年级的杨源争（12岁）设计。他介绍：“每当鸟蛋一鸟窝，鸟蛋就会往下掉，更会落在磁球的方向。如果你继续吸引，但如果你继续吸引，无法动弹就输了”。他与父亲还加入其他磁铁让游戏更加有趣，或是使用较细的铜管来增加游戏的难度。

杨源争的灵感来自八岁时以科学为主题的生日派对，当时有一个魔术定律（Lenz Law）的游戏让他印象深刻。再加上他与家人目标和磁子吸引的磁球送到最高的洞口，途中避免其他人回口才算“解救”成功。

这项比赛由索尼及新加坡科学馆联合，并获得教育部支持。



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Persons of Strength & Character

Winner of the WhizKid Category in 2019 (Lenz Chess from BGPS)



SONY Creative Science Award (Science Centre Singapore)



Judging Criteria

Junior WhizKid (P1-P2)

WhizKid (P3-P6)

Scientific Concept

Scientific Concept

Creativity and Originality

Creativity and Originality

Sturdiness and Design

Sturdiness and Design

Size of toy (max size of 60cm x 60cm x 60cm)

Size of toy (max size of 60cm x 60cm x 60cm)

Fulfils Requirement (Theme: Jump and Surprise)



Empowered Learners,
Persons of Strength & Character

More details about SCSA



More details about the Sony Creative Science Award (SCSA) can be found:

- SLS package
- Facebook

<https://www.facebook.com/SonyCreativeScienceAward/>

- SCSA website

<https://www.science.edu.sg/for-schools/competitions/sony-creative-science-award>



Sony Creative Science Award (SCSA)



1.3K likes · 1.5K followers

Sony Creative Science Award is jointly organised by SONY & Science Centre Singapore, with support of MOE & A*STAR

www.science.edu.sg/scsa



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2023 SCSA Highlights



Facebook

SCAN ME



Follow **Singapore Science Buskers** on Facebook!

<https://www.facebook.com/sciencebuskers>

Filled with **important updates** like workshops, audition dates and photos of our events!



The background is a vibrant watercolor wash of colors including teal, blue, green, and orange. A large, white, brushstroke-like shape is painted across the center, containing the text.

Hands-on segment

Creative Science Toy Making

Get your
materials
ready now!

- 1 rubber band
- 2 paper cups
- sharp tip (satay stick / pen)
- a piece of paper
- sticky tape
- scissors
- colour pencils



The toy we are making...

A SURPRISE JUMPING TOY!

Scientific Principle

When a cup is stacked on top of the one with the rubber band tied at the bottom, it stretches the rubber band. Upon release, the **potential energy stored in the stretched rubber band is converted into kinetic energy and transferred to the toy.**

The toy jumps up and surprises the audience!



How to make the toy?



CREATIVE SCIENCE TOY MAKING @ BGPS

Challenge
Yourself!

Create a toy that can “jump and surprise”

Once you have completed the challenge, scan the QR code and submit a picture / video of your toy on Padlet.

https://padlet.com/elissa03/2024_CSTM



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End of Sharing



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Thank You



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