



**Yew Tee Primary School**

*Reflective Learners, Gracious Citizens*



@ Yew Tee Primary School



## Background

- YTPS has participated in SCSA for more than 10-years.
- Appointed as teacher i/c as have shown interest in student innovation
- Toy submissions based mainly on pupil's interest.



## 2012

- A structured approach was in place to introduce the science of toy-making to all pupils.
- All pupils from P1 to P6 were given a proposal template to conceptualise a toy idea based on a scientific principle.
- Science teachers were tasked with providing consultation for pupils to further develop their ideas.
- An school-based internal competition was introduced.
- Won Commendation Award [Most Unique Mechanism]



## YTPS – SCSA website

**Home**

**Home**

The Sony Creative Science Award (SCSA) is an annual competition jointly organised by the Science Centre Singapore and Sony Electronics Asia Pacific Pte Ltd, with the support of the **Ministry of Education** and the **Agency For Science, Technology and Research (A\*STAR)**.

The theme every year has been about "**Creative Toys**".

In this competition, pupils are challenged to use their imagination and creativity to make toys that demonstrate scientific principles. The main objective of this competition is to **promote creativity among the primary students**.

- Home
- 01. Updates
  - SCSA Media Coverage
  - SCSA Progress
  - Where to buy Toy Parts?
- 02. Categories
- 03. Class Requirement and Submission Matters
- 04. Past Year Winners Hall of Fame
  - Winning Toy Videos

*website to provide information on the SCSA programme*



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# Internal Competition and Judging



*getting Science department teachers and even our P and VPs involved in the judging process*



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# Internal Winners



*Internal winners for the SCSA-YTPS*



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# Awards for our Internal Winners

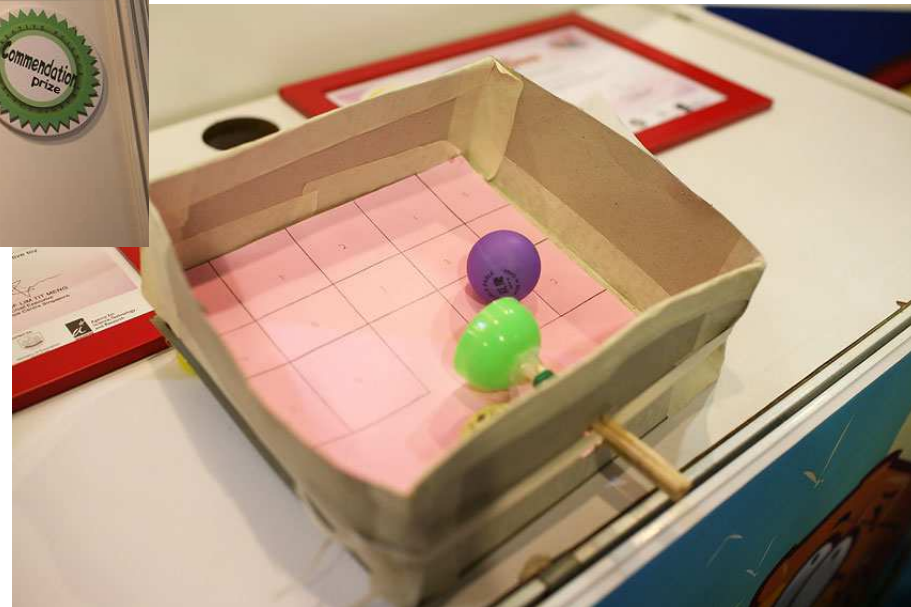


*Recognition for our top 10 winners for the SCSA-YTPS*



# Yew Tee Primary School

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*Magnetic Pinball – Most Unique Mechanism Award  
breakthrough win after 10 years of participation*





# Yew Tee Primary School

*Reflective Learners, Gracious Citizens*



*Tricia Lim Xin Hui and Ng Li-Wen Hannah*



## 2013

- Consultation period during after school hours was catered for pupils.
- Within the consultation period, there was a dedicated training group that include pupils whom have shown ideas that were unique, aligned to the theme and showed potential.
- Focus also on aesthetics rather than just functionality alone.



## 2013

- Using videos to record pupils with their toy projects. Videos to get pupils to have greater sense of ownership to their toy project, instilling confidence as well as a source of future resource for the SCSA-YTPS.
- Internal judging by Science teachers with rubrics to improve the judging process.
- Promotion of SCSA at assembly programme.



## 2013

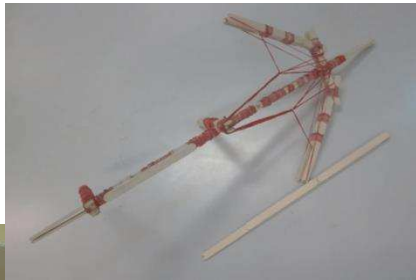
- Achieved 2 Merit Awards.
- Achieved 1 Commendation Award [Best Toy Design].
- 2 Blue Ribbon Awards.



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# Improving Form and Functionality



2012



2013



2014



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# Scoring Rubrics

5-point criteria for consideration:  
Is the toy...  
1) Fun? 2) Safe? 3) Sturdy? 4) Portable?  
5) Aesthetically pleasing?

Criteria	5 (Excellent)	4 (Very Good)	3 (Good)	2 (Fair)	1 (Poor)
Fun	😊	😊	😊	😊	😊
Safe	😊	😊	😊	😊	😊
Sturdy	😊	😊	😊	😊	😊
Portable	😊	😊	😊	😊	😊
Aesthetically Pleasing	😊	😊	😊	😊	😊

Additional text on the form includes: "Name of the Toy: \_\_\_\_\_", "Name of the Designer: \_\_\_\_\_", and "Date: \_\_\_\_\_". There are also small illustrations of a child and a toy.



## Use of Video Documentation

- <http://youtu.be/a61c7TIUly8>



*Shot at high definition video and uploaded onto YouTube*



## 2014

- Teachers expressing interest in SCSA were recruited. Coincidentally they also have strong background knowledge in Science.
- Incorporated into 2 EC (Extra Curriculum) sessions for P5 and P6.
- Infused to Young Scientist Programme;- a programme held during recess time for each pupil to showcase their toy prototype





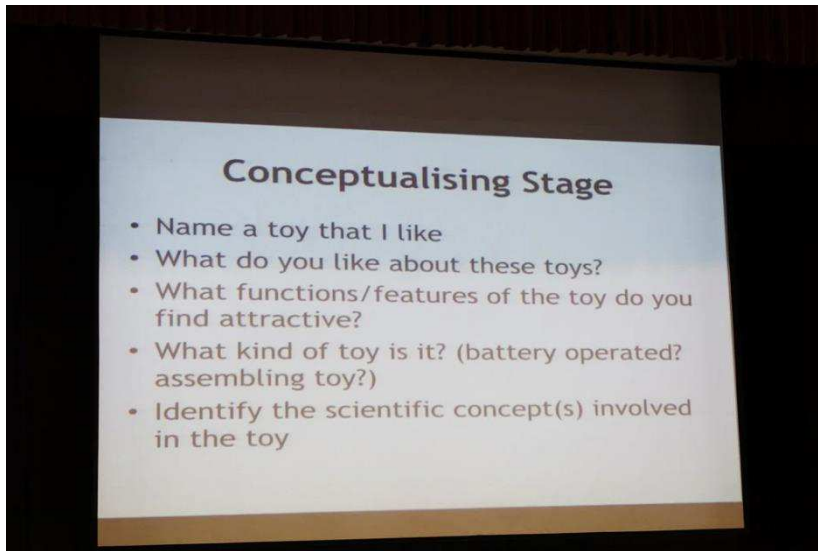
# Yew Tee Primary School

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- Achieved 3rd for WhizKid Category.
- 2 Blue Ribbon Awards and 1 Diamond Award.
- Friends of SCSA 2012 – 2014.



## SCSA infused into curriculum



*Mass lecture for P5 and P6*



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# Young Scientist Programme



*Pupils showcasing their toy prototypes during the Young Scientist Programme held during recess*



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*Ashley Tan with her family and GOH for her 3rd prize in the WhizKid Category*



## 2012

### MAGNETIC PINBALL TOY

**A Dream Holiday Toy**

Our dream holiday toy fits the Whiz Kid criteria as it is portable, challenging and a source of endless fun. It can also be played in a single or multi-player mode. You can play it when you are travelling and especially during times that you are bored eg, on a long flight. Our toy also displays some science concepts like magnetism and energy.

**Description of Toy**

This toy is made mostly out of simple and easy-to-find materials like cardboard, rubber bands and magnets. We stuck the magnets under the box and filled the ball with staples so it can be attracted to the magnets. A used toy capsule and chopsticks are used as the launching mechanism. The magnet shells are used to prop the toy at an incline.

**Instructions**

**Single player**

1. Place it on the table or floor (somewhere flat).
2. Put the ping pong ball in the launcher.
3. Aim left, right or centre of the box and pull the chopstick to launch the ball.
4. Record your points.
5. Try to beat your own highscore.

**Multiplayer**

1. Number yourselves.
2. Take turns and do step 1-4 in single player.
3. Pass it to the next person and repeat.
4. After 1 round, calculate score.
5. Compare. Player with the highest score wins.

actual score board

1	2	3	4
1	2	3	4

done by Hannah Ng Li-wen and Tricia Lim Xin Hui (6Faith)  
Yew Tee Primary School

*Commendation Award*  
*[Most Unique Mechanism Award]*



## 2013

### Flying Butterflies in a Moving Garden

#### Flying Two Butterflies on MAGNETS

- 1 Push the toy forwards and we have a Moving Garden. This movement is achieved by wheel and axle.
- 2 When the Garden is moving, one Butterfly flies up and down using the cam and shaft.
- 3 The Butterfly flies higher as the Magnets with both LIKE POLES REPEL.
- 4 The other Butterfly is dancing too! It rocks up and down in the Pivoting System.

**Scientific Principles:**

- >Magnetic Force
- >Cam and Shaft
- >Pivoting System
- >Wheel and Axle

Ng Choi Yin & Tan Zi Ting  
Yew Tee Primary School  
P3 Respect

Merit

### ★ THE ROLLING CAN ★

LED LIGHT  
RUBBER BAND  
WEIGHT  
CONTAINER

PUSH → ROLL → ROLL → STOP

ROLL ← ROLL ← ROLL ←

To play, you simply push the toy away from you and watch how it moves in a ROCK and ROLL motion with the toy WOBBLING in the can.

Another feature of the toy enables it to light up with a push of a button on the remote control. You can also adjust the brightness and the colour of the light.

REMOTE CONTROL

LED LIGHT

SWITCH

**Scientific Principle:**  
Conversion of energy - from Kinetic Energy to Elastic Potential Energy and back to Kinetic Energy.

Ashley Tan Yu Xin  
P4 Perseverance  
Yew Tee Primary School

Before playing, ensure that the switches at the sides are switched on.

Commendation Award  
[Best Toy Design]

### The Rocking Doll

WHO IS THE BALANCING CHAMPION? FIND OUT BY PLAYING WITH MORE FRIENDS!

- Step 1** Shake the toy to spread out the beans inside.
- Step 2** Place the toy on a flat and hard surface.
- Step 3** Push the toy with your hand. Watch it ROCK to and fro!
- Step 4** Play it with a friend by placing the doll on a large book. Repeat steps 2 and 3. If one of the arms touches the book, it is Game Over.

**Observe**  
The toy ROCKS and WOBBLER back to its original position. The 4 arms help to stabilise the Rocking Doll.

**Scientific Principle**  
Centre of Gravity

**Tan Hui Wen, Shervon**  
P6 Integrity  
Yew Tee Primary School

Have fun playing!


CG

Pull of gravity ↓


Merit



## 2014



# THE SPINNER



**Instructions for Play**

**Step 1:** Place the battery on top of the magnet and put them on the metal container.

**Step 2:** Put one of the copper wires on it and the toy will start to spin.

(Make sure that the side of the battery that is facing up has an 'O' ring).


The 'O' ring helps to prevent the copper wire from falling off the battery when spinning.

Copper Wire





Battery

Magnet

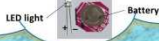
Metal Container



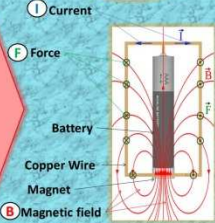
We can bend the copper wires into different shapes.

You can also put LED lights on some of the copper wires. You just have to put the LED light onto the batteries.




My toy is a device that converts magnetic field and direct current (DC) into motion. As the current travels perpendicular to the magnetic field, a Force is exerted on the wire which generates the spinning motion. It is known as a Homopolar motor and it was built by Michael Faraday in 1821.



**Ashley Tan Yu Xin**

*P5 Respect*

**Yew Tee Primary School**



3rd @ Nationals for WhizKid Category





## My Role as a SCSA Teacher i/c 2015 and beyond

- Teacher in-charge for the last 4 years.
- More of an advisory role to handhold new teachers to the programme.
- Succession planning because nobody is indispensable;- to pass on the torch to the next teacher so they can inject new ideas and give new insights to the programme.
- Refining existing structures like archiving, information dissemination and management.



## My Role as a SCSA Teacher i/c 2015 and beyond

- Promote the programme and to get more involvement and participation from pupils.
- Applying and accepting new and fresh ideas by teachers in the programme eg. portfolio, communication via Edmodo, Hall of Fame, dedicated YouTube channel,
- Exploring new approach eg. Science fair



## Acknowledgement

- **Mrs Janis Kok (ex-P) Miss Ang (P), Mrs Sharon Tobias (VP), Mdm Nooris (ex-VP)** for their guidance and advice.
- **Ms Ananthy (HOD, Science) and Ms Ng Yawling (SH, Science)**  
**Mr Low Hock Siang (SH, Special Projects)**
- **Mr Darren Wong and Mr Jegendren Tanapal**
- **P1 to P6 Form Teachers**
- **Mdm Moli (Lab Technician)**

*“Alone we can do so little, together we can do so much”*

THANK YOU