

Welcome to National Robotics Competition 2023

Organiser:

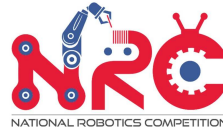


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NRC Regular Category

Lower Primary: 7-9 years old | Upper Primary: 10-12 years old
Secondary: 13-16 years old | Tertiary: 16-19 years old

NRC Open Category

Primary: 8-12 years old | Secondary: 13-16 years old | Tertiary: 16-19 years old

NRC AI Maker Series

Primary: 8-12 years old | Secondary: 13-16 years old

NRC Preschool (KUBO Challenge)

5-6 years old

NRC Preschool (ARtec Challenge) *NEW*

5-6 years old

NRC CoderZ Coding Challenge (Online)

Primary: 8-12 years old | Secondary: 13-16 years old

NRC RoboCup Singapore CoSpace Coding Challenge *NEW*

Primary: 8-12 years old | Secondary: 13-16 years old | Tertiary: 16-19 years old

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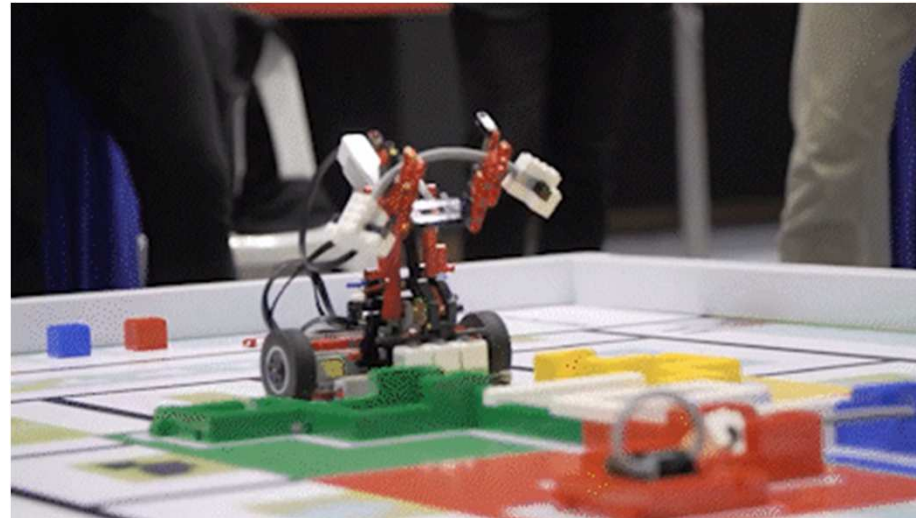


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Held live on-site at Science Centre Singapore from 21 August to 9 September 2023



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NRC Preschool 2023 KUBO Challenge

5 – 6 years old

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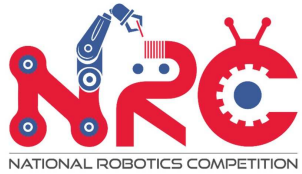


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Agenda for the Webinar

- Introduction to the NRC Preschool Category
- Online Presentation
- Introduction to Gameplay
- Onsite Competition
- Scoring
- Awards & Prizes
- Important Dates

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Introduction to NRC Preschool Category

KUBO Challenge

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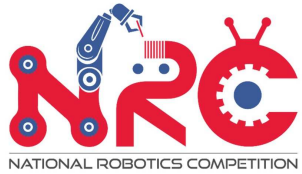


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Ask me Questions on NRC

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NRC Preschool Category 2023



- Mission-based competition
- Code and fabricate add-ons for KUBO robot to solve missions on a game field
- Theme: Green Home
- Complete missions around the home

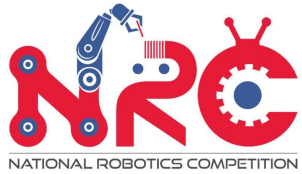
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NRC Preschool Category 2023

- Age: 5 – 6 years old (as of 31 December 2023)
- Team size: 2 – 5 participants led by 1 – 2 coaches
 - 1 participant and 1 coach do not constitute a team
- Hardware: KUBO
- Software: KUBO



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Online Presentation

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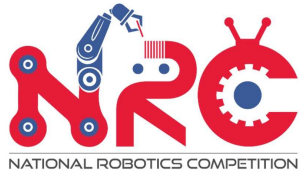


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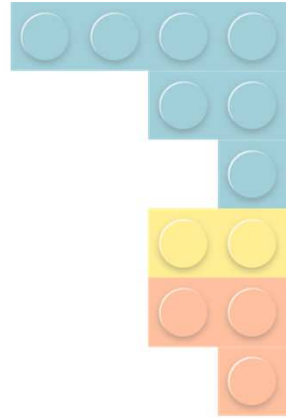
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Online Presentation

- Learning and reflection
- Design and fabrication of KUBO's solar panel
- 8 minutes per team
 - 5 minutes for presentation
 - 3 minutes for Q&A
- 10 slides maximum



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Onsite Competition

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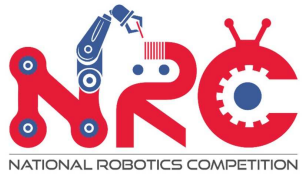


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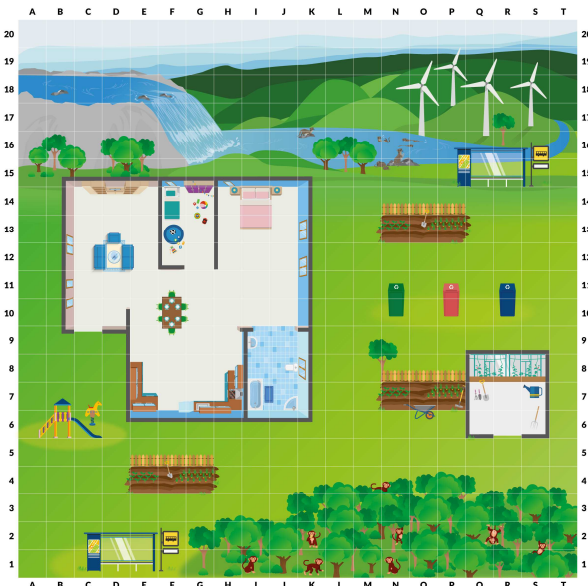


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Gameplay for NRC Preschool



Mission-based Competition

Missions:

1. Sorting Recyclables
2. Collecting Organic Waste
3. Following Road Safety
4. Planting Seeds

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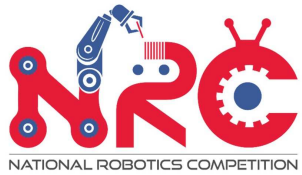


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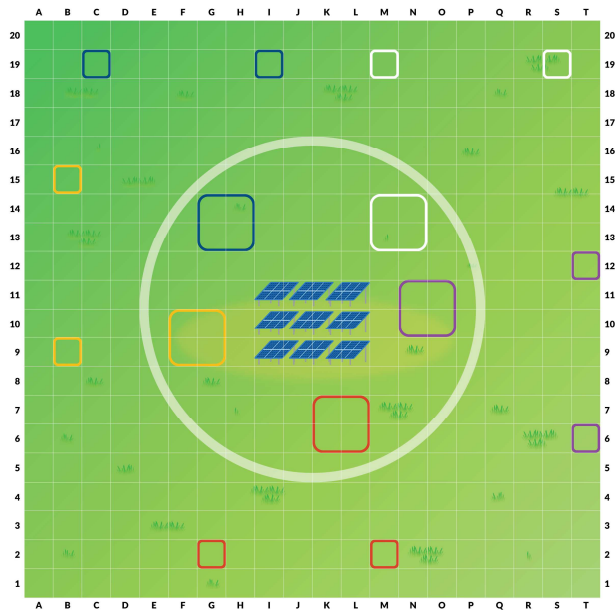


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Gameplay for NRC Preschool



Mission-based Competition

Collaborative Mission:
5. Harnessing Solar Energy



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Allowed Robot Systems



- 1 KUBO Coding Starter Set
- 1 KUBO Coding+ Set

***Use of KUBO Coding++ Set is not allowed.**

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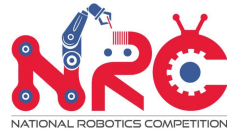


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Scoring

Organiser:

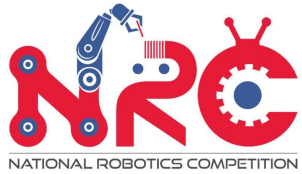


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Scoring of Presentation

Criteria	Score
Reflection <ul style="list-style-type: none">• What have they learnt during the coding process?• What was their favourite part of the process?	10
Design and fabrication of KUBO's solar panel <ul style="list-style-type: none">• What materials did they use to build the solar panel?• How did they come up with the design of the solar panel?• Why is solar energy a good source of renewable energy?	10
Presentation <ul style="list-style-type: none">• Clarity of presentation• Creativity of presentation• Q&A	10

- Scoring sheet on Section 7
- 30 points for presentation

Organiser:

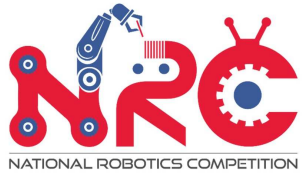


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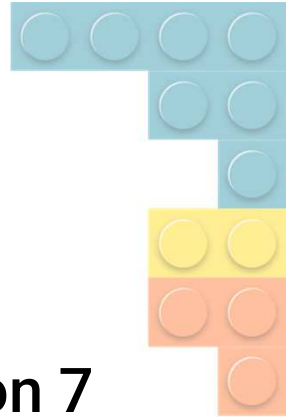


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Scoring of Missions



Missions	Score	Total/Max
1. Sorting Recyclables		
Travel from Grid A1 to children's playroom (Grid G13)	2	15
Transport empty plastic container from children's playroom (Grid G13) to recycling bin for plastics (Grid P10 - P11)		
- Any part of plastic container within the grids of the recycling bin	2	
Transport empty plastic container (hands-free)* throughout mission	2	
Time left: <2 minutes: 1 pts 2 - 4 minutes: 2 pts >4 - 6 minutes: 3 pts >6 - 8 minutes: 4 pts >8 - 10 minutes: 5 pts	5	
Use at least 1 set of KUBO function tile (at least 3 TagTile® pieces, excluding function tiles)	2	
No interference from coaches#	2	
2. Collecting Organic Waste		
Travel from recycling bin (Grid P10 - P11) to dining table (Grid F10) where brown crate with banana peels is	2	15
Transport brown crate with banana peels from dining table (Grid F10) to garden shed (Grid Q6 - S8)	2	
Transport brown crate with banana peels (hands-free)* throughout mission	2	
Time left: <2 minutes: 1 pts 2 - 4 minutes: 2 pts >4 - 6 minutes: 3 pts >6 - 8 minutes: 4 pts >8 - 10 minutes: 5 pts	5	
Use at least 1 set of KUBO function tile (at least 3 TagTile® pieces, excluding function tiles)	2	
No interference from coaches#	2	

- Scoring sheet on Section 7
- 70 points for missions

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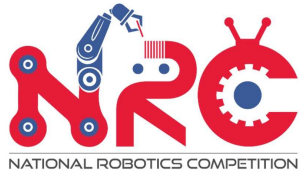


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Overall Scoring

- **Overall** scores comprise of both presentation & mission scoring
 - Online presentation (30%)
 - Missions (70%)

*** Note: Only scores from the presentation and missions will be counted towards the overall championship award**



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Awards & Prizes

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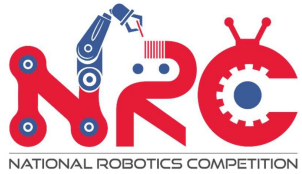


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Awards & Prizes

- **Overall Championship**
 - 1st Place: \$400, trophy, banner, medals (per participant)
- **Best Robot Performance**
 - 1st Place: Trophy, medals (per participant)
 - 2nd Place: Medals (per participant)
 - 3rd Place: Medals (per participant)
- **Best Presentation**
 - Top 3: Medals (per participant)

* *The Organiser reserves the right to amend the prizes without prior notice.*

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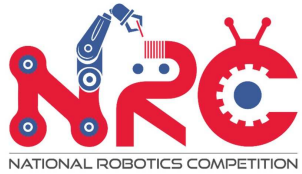


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Awards & Prizes

- **Best KUBO Robot Design**
 - Top team: Medals (per participant)
- **Best Teamwork**
 - Top team: Medals (per participant)
- **All Participants**
 - Certificate of participation

** The Organiser reserves the right to amend the prizes without prior notice.*

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Important Dates

Organiser:

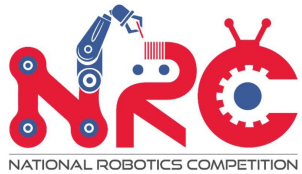


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Important Dates

	Dates	Time	Remarks
KUBO Training	TBA	TBA	Training will be conducted onsite at Newton Room, SCS
Kit Collection	TBA	10am – 5pm	Collection at KidsSTOP™, SCS
Online Presentation	21 st or 22 nd August 2023	10am – 5pm	Date and time slot will be released closer to date
Onsite Competition	28 th or 29 th August 2023	9am – 5pm	

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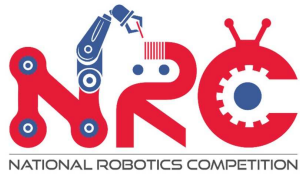


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FAQ – Preschool

1. Is there a minimum team size?

Ans: Yes, a minimum of 2 participants to 1 teacher/coach is required to register for the Preschool category.

2. Can there be a mixed team (K1 and K2) in a team?

Ans: Yes, each team can consist of members aged 5 – 6 (as of 31 Dec 2023).

3. Where will the on-site competition be held?

Ans: It will be held at Annexe Hall 2 & 3, Science Centre Singapore.

4. Do we have to purchase KUBO sets?

Ans: One set of KUBO Coding Starter Set and KUBO Coding+ Set will be loaned out for free to each team. Teams are required to return the rented sets in good condition at the end of the competition. Teams will be liable to make full payment should any loaned items be damaged or missing.

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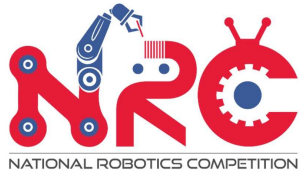


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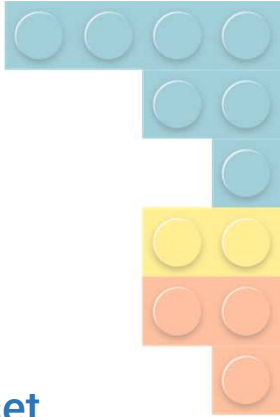


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FAQ – Preschool



5. Where can we download or purchase the game field mat?

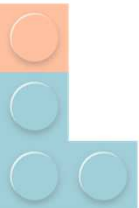
Ans: Game field mat 1 will be loaned out to all participating teams, together with a set of game field manipulatives.

6. How many teams can I send per school?

Ans: There is no limit to the number of teams that each school can send. However, the registration fee of \$30 per team applies.

7. How much is the fee for the KUBO training session?

Ans: The training session for KUBO will be provided to teachers/coaches for free.



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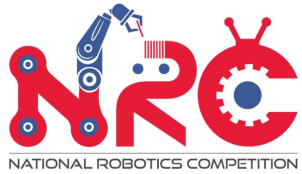


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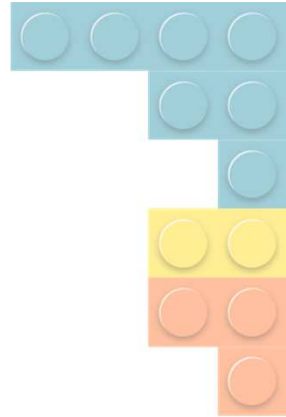


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FAQ - Registration



1. If we are registering as a private team, what do we put under school name?

Ans: **You can indicate as “independent” or “private”.**

2. Can we pay the registration fee by e-invoice? Is there any other method of payment?

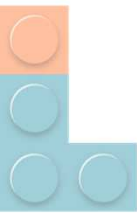
Ans: **We only accept credit card payment through our registration platform.**

3. Can a coach/mentor be repeated for multiple teams?

Ans: **Yes. However, each team needs to be assisted by a coach at all times.**

4. When is the latest cut off for registration?

Ans: **Registration opens from 24th February – 1st July 2023.**



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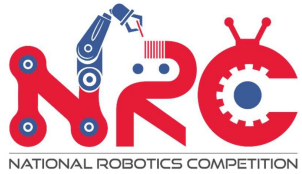


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FAQ -Others

1. Can I get tickets as a bystander to view the competition?

Ans: There is no need to purchase tickets to view the competition, walk-ins are allowed. There will be a designated zone for the audience to sit and view the competition. Seating is on a first-come-first-serve basis.

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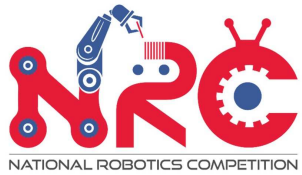


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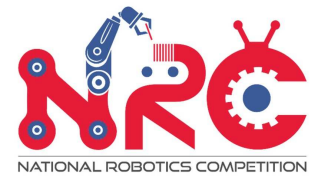


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