General FAQ

Question	Answer
1.Can I get tickets as a bystander to view the competition?	There is no need for bystander tickets to view the competition, walk-ins are allowed. There is a designated zone for the audience to sit and view the competition. However, if you are inviting a large group audience, please inform Science Centre via NRC@science.edu.sg.
2.Will there be another webinar or more details for the presentation?	Each category has only one webinar for the challenge announcement. The webinar recording is available in the NRC website for viewing.
3.Can I register for more than one category? Is there a maximum no. of teams each school can register for?	Yes, if the dates are not overlapped. There is no maximum no. of teams a school can register. Registration is on a first come first serve basis. We will reject and refund the registrations if the category is full.
4.If we are registering as a private team, what do we put under the school's name?	You can indicate it as "independent" or "private".
5.Can we pay the registration fee by e-invoice? Is there any other method of payment?	We only accept credit card payments through our registration platform.
6.Can a coach/mentor be repeated for multiple teams?	Yes.
7.When is the latest cut-off for registration?	Registration opens from 24 Feb to 1 July 2022.
8.Is there any preparation class/workshops provided by Science Centre?	There will be preparatory workshops for beginners or teams who wish to have a quick refresher course. However, this is only available for registered teams. There will also be bi-weekly 1-hour consultation sessions where registered teams are able to join the zoom session to ask questions before the competition. Please refer to the NRC Website for the workshop and consultation dates

NRC Regular Category FAQ

Question	Answer
NRC Regular Category– Playfield/Run	
1. What is the colour of the side panels of the board that holds the playfield?	The colour of the side panels are black. Please refer to the Regular Category general booklet for more information
2. How tall will the wall of the playfield be?	The minimum height is 7 cm.
3. Where can we download or purchase the playfield mat?	Please download the Playfield Mats on our website here.

Question	Answer
	Participants/Schools/Teachers/Coaches are required to source their own playmat printing.
4. How many teams will be sharing a single playfield on the day of competition?	Depends on number of registered teams in total.
5. How many runs will each team get for qualifying round? How many trial runs will each team get?	Each team will get 2 runs for the qualifying round.
6. Will there be a Surprise Rule? What is the time allowed to work on surprise rule? When/if will they be introduced during prelim/finals? What is the format?	Please refer to NRC Regular Category, General Rules, 5.3 Robot Run Challenge Format # 2. "If there are any Surprise Rules during the competition round, this will be conveyed to the teams by a briefing that will be conducted by the Referee in charge before the start of the Practice Time. If the surprise rule brings additional game elements, teams are not allowed to remove these elements from the playing field if they do not want to solve the surprise rule."

NRC Regular Lower Primary Category Mission Run FAQ

Question	Answer
1. Can all the props be collected back to the base? If so, can the props move between bases?	No. The scoring elements/props which are allowed to be touched by hand in the charging area/base will be the scoring elements/props already at the charging area/base before the start of the run. (e.g., edible seeds X3) The rest of the scoring elements/props already positioned in their designated areas on the field is not allowed to be brought back to charging area/base for the purpose of human manipulation, positioning, placement and/or transporting between charging stations/bases.
2. In General Rules page 8 point 9 (for lower primary), it is said that "the robot can be controlled by any compatible device." But in page 13 point 1, it is said that "no laptops should be brought to the team area." If the students want to control the robot using a laptop, can they still bring their laptops to the team area?	Yes. For the lower Primary category, laptop will be allowed to control the robot during non-autonomous mode. During autonomous mode, participants/students will be asked to place the controller on a designated spot or container possessed by the judge/official.
3. After the students finish the mission (e.g planting edible seeds), can the students remove the previous mission pieces (e.g the edible seeds) before continuing to the next mission?	No. Some mission scores will be awarded based on the "final" position of the scoring elements after the end of the challenge run. Participants are not allowed to touch/manipulate the scoring elements in the competition field during a run.
4. The rule mentions that teams are not allowed to touch the robot when the robot is moving during the robot run. Are teams allowed to use their hands to load the game objects onto their robots when the robot stops in front of the game object? If not allowed, does it mean that the robot needs to have ways to pick up and put	No. While the robot is out of the charging area and attempting any of the missions, the participants are not allowed to use their hands to aid the robot in any way in accomplishing any of the missions or tasks.

Question	Answer
down the game objects at the respective areas without the use of hands?	
NRC Regular Upper Primary/Secondary Category Mission Run FAQ	
1. Is the building (in the City Centre) secured to the playfield using double sided tape?	Yes. There will be penalty for moved and damaged Building in the City Centre.
2. In the mission brief, clause 3.3, there is no mention of handling the water units for the robot	Teams are supposed to bring the drinkable water blocks using the robot to the city centre. They are not allowed to physically touch the water blocks at any point in time during the robot run. If their robot brings the undrinkable water block partially or completely inside the city centre, they will receive a negative score.
3. Under the Game Rules, Section 4.4, Scoring, where is the warehouse that it is referring to? Is it the Plant Warehouse? Does it mean that the construction equipment needs to be moved to the Plant Warehouse for bonus points?	Yes. The warehouse is referring to the plant warehouse (the black circle). Bonus points will be awarded to teams if they return all their Construction Equipment back to the Warehouse area after use
4. What are the starting orientations of the Gardener, Plant Warehouse Staff, Solar Factory Staff, Trees, Solar Panels, Seedlings, Yellow/Red flower plants, and Hanging pots?	Please refer to the Upper Primary / Secondary booklet for the orientation.
5. If robot can sweep back all the plants, water, trees, pots, hanging pots and solar panel back to loading bay, what can we touch by hand? What if the props that the robot carrying is partially touching the loading bay? Or if the robot is partially in but props are not.	If the robot is touching the loading bay and has come to a complete stop, the teams can proceed to unload the Fragile seedling, solar panel, red flower plants, and yellow flower plant and hanging pots that are on the robot even if they are not partially in the loading bay. OR If the props are not on the robot, teams can only physically touch the Fragile seedling, solar panel, red flower plants, and yellow flower plant and hanging pots when they are completely in the loading bay. Other props that were brought into the Loading Bay cannot be physically manipulated by hand by the teams.
6. After the robot has come to a complete stop within the loading area, is the team allowed to physically move the robot before resuming the run?	Once the robot comes to a complete stop and it is partially/fully within the loading bay, -Teams are allowed to touch their robot or switch programs by hand -Teams are allowed to realign their robot and is only allowed to start off again from the loading bay, with the robot completely within the loading bay. -They should only start their robot after all props have been moved to where the team requires (i.e. if the team is still rearranging the props onto the Construction Equipment, their robot should not start until they're done.)

Question	Answer
	- If the robot is in motion and the team is still handling the props, there may be penalties. - Do note that teams are not allowed to reprogram or enter data into the robot at any point of the robot run.
7. Does it mean that the robot size can be of any size when we change the mechanism in the loading bay?	No. Teams are only allowed to switch program and reposition them after the robot comes to a complete stop and it is partially in the Loading Bay. Teams are not allowed to change the robot mechanisms.
8. Are we allowed to combine the yellow plant and hanging pot by hand in the loading bay?	Teams are not allowed to combine the yellow plant and hanging pots by hand. They will be loaded onto the Construction Equipment in whatever state (combined or separated) the robot brought them into the Loading Bay.
9. Must the robot and construction equipment fit fully within the loading bay before robot bring the construction equipment to the construction area?	Teams must place their construction equipment in the construction area before the start of run. Teams are not allowed to move the construction equipment by hand during the run. Should your strategy involve moving the construction equipment to the loading bay, the construction equipment should not be handled/moved by hand during the run. You are only allowed to load the selected props onto the construction equipment.
10. If the Construction Equipment is activated by the robot to extend, and it is touching the building and the props, would points be awarded? Are we allowed to leave the construction equipment touching the building?	If the Construction Equipment is activated but the mission (s) is not accomplished, no points are awarded. After the start of the match, teams' robot is allowed to push their construction equipment to be touching the building. Points are awarded based on the completion of the tasks listed in the scoring table. The Construction Equipment can be touching the building at the end of the run, and still score points provided the tasks are completed. Do note that there are bonus points when the building in city centre is not moved or damage.
11. I have the construction equipment that is like a slope. Can I score points directly by loading the prop by hand onto the construction equipment and it slides into the designated area?	Yes, you may. The end state of the required props will need to be in their designated location/orientation to score points. Do note that the construction equipment can only be touching the building during the robot run and with the action from the robot. Teams will need to load the required props on the construction equipment first, then activate/move the construction equipment. During the robot run: - the construction equipment can only move beyond the boundaries of the construction area with the action from the robot

Question	Answer
	- the robot can move the construction equipment to be touching the city centre building
12. If the base of the construction equipment remains in the grey track, can the extension of the construction equipment touch the building at the start of the run?	No. The extension of the construction equipment can only touch the city centre building during the robot run and with the action from the robot.
13. Will it count if the items are placed on the construction equipment, and it moves down on its own into the designated area by gravity?	Yes. The required props will need to be in their designated location to score points. Do note that the construction equipment can only be touching the building during the robot run and with the action from the robot. Teams will need to load the required props on the construction equipment first, then activate/move the construction equipment
14. Do the plants / solar panels need to be touching the building to be counted as "in the building"?	The plants/solar panel will need to be on required levels of the building and meet the mission requirement to obtain the full points for the missions. If they are in the city centre but not on the building, they will be scored accordingly. Please refer to the Page 18 of the "01b Games Rules Upper Pri_Secondary" for the mission and scoring details.
15. Can the plants / solar panels be touching the construction equipment?	The construction equipment is (are) used to aid the team in placing the required props into the building in the City Centre. During the assisting process, the fragile seedlings, yellow flower plant, red flower plant and solar panel can be touching the construction equipment.
16. Regarding the charging switch, must we complete other tasks before turning it on, or do we have to attempt the other missions? It is stated under point 5 that we may "decide in which order they will do the missions" but in point 5.5 it seems to suggest that the switch is to be activated after other tasks have been completed.	The Charging Station mission (Mission 5.5) must be the last mission of the entire attempt.
17. Regarding the hanging of hanging pots, must the hanging pots only be supported by the building and not the construction equipment in any way for the points to count?	Yes. The hanging pot can only be supported by the building. The hanging pot can be in any height of the plant wall, as long as the base of the hanging pot is not touching the playfield mat.
18. For the city management tasks, can the props (Fragile Seedlings, Red Flower Plants and Yellow Flower Plants, and the Hanging Pots only) be partially supported by the construction equipment as well as	No. The solar panel will need to latch on the top level of building. The yellow flower plant and hanging pot will need to be hanging at the plant wall of the building.

Question	Answer
the relevant parts of the building to score points?	The red flower plant will need to completely in the mid-tier of the building.
19. When the potable water, human staff, trees props and solar panel are all pushed into the loading bay, when the students reposition their robot inside the loading bay, can they rearrange these props onto/with the robot? The rules state that the robot operator can use their hands to manually shift the fragile seedlings, red, yellow flowerpots and hanging pot onto the construction equipment, but what about other props?	No. Teams are not to touch the other props (Gardener, Plant Warehouse Staff, Solar Factory Staff, Drinkable Water, Undrinkable Water, Trees, Empty Pot and Sun Beam) that are brought into the Loading Bay by the robot.
NRC Regular Category– Robot	
1. Can robot inventor 51515 be used?	Yes, robot inventor is allowed for upper Primary / Secondary Category.
2. Can we rebuild our robot after the presentation if we decide to make another design for the robot before the robot run?	Yes. The design and engineering process is reiterative!
3. Will it be legal for us to bring extra materials to be placed on our robots for the run?	Depends on what participant means by "extra materials". Only materials stated in General Rules allowed. Spare parts are allowed.
4. Is there any limitation for motor?	Please refer to page 7 of General Rules.
5. Can Lego WeDo 2.0 be used in the Upper Primary Category?	No, WeDo 2.0 is only allowed lower Primary Regular Category
6. Is there a limit to how much cameras I could build for the robot?	The number of sensors and motors used is not restricted.
7. Can Lego Spike be used to build the robot?	Spike Esssential can be used for the lower primary category.
8. Can I build a robot which has 2 or more Lego Brains/ Smart Hub?	No. Please refer to NRC Regular Category, General Rules, "A team is allowed to bring and use only one controller when called to the playfield. The team can bring spare controllers and parts on standby into the quarantine area. If the team needs a spare controller or any other parts from outside the quarantine area (eg. from the coach or mentor), the team should contact the judge before getting the spare part."
9. Can the participants bring robots pre-assembled? Will there be dismantling of robots?	We do not require robots to be assembled on the spot during competition. You may bring pre-assembled robots.

Question	Answer
10. Will there be charging points available?	Yes. Participants workstations will have a charging point.
11. Is Wifi available in the competition arena?	No.
12. If the students use a ruler (made of Lego) to determine where they want their robot to start in the charging area, will it be allowed?	Yes. Please refer to NRC, Regular Category, General Rules, Robot Material and Regulation rule #5."If a team wants to use any equipment to align in the start area, this equipment must be built out of LEGO® materials, it must fit into maximum robot dimensions (i.e., included in the 250 mm x 250 mm x 250 mm dimensions)."
NRC Regular Category– Presentation	
1. For the presentation, are we using physical or digital poster?	Up to participant's choice.
2. Will there be a playfield in the presentation venue?	No.
3. Do we need to show codes in presentation?	Presentation of the challenge solution should include coding of the solution. (Gen Rules page 12)
4. Do we need to have a physical 3D robot for the presentation, or can it be 2D?	Teams are required to showcase their physical robot that they have built for the mission.
5. Will other participants be there to view our presentation live in the presentation room?	No.
6. Is it fixed slot for presentation?	Yes, schedule will be drawn up.
8. Is the presentation round also at Science Centre?	Yes.
9. Apart from showcasing their physical robot for robot game, is the team expected to present on their robot game strategy, robot design, build and coding process?	Yes. The processes are important for judges to gauge participants' learning journey. It also helps to demonstrate originality of work i.e., not just a solution given by mentor.
10. How will the presentations be conducted? Judges go from table to table for each team?	Presentations are conducted in rooms, with judges and students in the room. Screens and VGA/ HDMI cables will be provided for presentation projections. Do note that laptops will not be provided.
NRC Regular Category – Others	

Question	Answer
1. When can we go to the venue to calibrate and test our robots on the field conditions?	There will be practice runs on the actual robot run days.
2. Where will the robot competition take place?	Science Centre Singapore.
3. Does it means qualifier round will need to come 2 times for presentation and robot run?	Yes, once for presentation, once for robot run. If team qualifies for finals, there'll be an additional 2 sessions.
4. When will the Trial Playing Field Sessions be held?	Do look for our EDM to book your slots.
6. For the actual day of robot run, is there lunch break for the participants? Is there designated area to eat? Will there be any meals we can buy from NRC?	Yes, there will be a lunch break. Cafeteria at the Science Centre operates (except for competition day 29th August, Monday). There are also other restaurants in the Science Centre. More options are available a short walk away in Jurong East Central.
7. When will we know our allocated timeslot/date for the qualifiers? When will the schedules for robot run and presentation be out?	Shortly after end of registration period.
9. Can teams bring mobile phones or surrender them during competition? Can we use them to record our presentation and robot run? Safekeeping phone by organisers or own teachers?	Mobiles/ valuables are to be kept with teachers/ mentors/ parents.
10. Can spectators and parents come to watch the event? Do they need to pay entrance fee to watch?	No entrance fee for NRC (but entrance fees to Science Centre applies). Watching of presentations – No. Watching of robot runs is ok.

NRC Open Category FAQ

Question	Answer
NRC Open Category - Presentation	
1. Is it possible to do a PowerPoint presentation?	Yes, the use of PowerPoint to support your presentation is allowed. Display monitors are not provided however, please bring your own.
2. Is there projectors provided?	No projectors will be provided.

Question	Answer
3. Is there any size limit for the robot?	No size limit for the robot.

NRC Preschool FAQ	
Question	**Answer**
Team Registration	
1. Is there a minimum team size?	Yes, a minimum of 2 participants and 1 coach is required to register for the NRC Preschool (KUBO Challenge) category.
2. Can there be a mixed team (K1 and K2) in a team?	Yes, each team can consist of members aged 5 – 6.
3. How many teams can I send per school?	There is no limit to the number of teams that each school can send. However, the competition can accommodate a maximum of 60 teams this year and the registration fee for each team will remain at S$30.
4. Where will the on-site competition be held?	It will be held at Annexe Hall 2 & 3, Science Centre Singapore.
5. Can I drop out of the Challenge halfway? Are there any penalties involved?	$30 registration fee is not refundable. Due to accountability, the loaned KUBO sets need to be returned to KidsSTOP at any point teams wish to withdraw from the Challenge. The team is to bear the cost of delivery back to KidsSTOP if they opt for mailing and ensure all components are placed back into the box in working order.
KUBO-related	
1. When can we purchase the mat? What is the dimension of the mat?	1 mat for Game Field 1 will be provided to each team. The mat measures 100cm*100cm. The playable area will be 80cm*80cm, with each grid being 4cm*4cm. Extra Game Field 1s are not available for purchase at the moment.
2. Can I use more than 1 robot to complete the missions?	The entire competition round can only be completed using 1 set of KUBO Coding Starter Set and 1 set of KUBO Coding+ loaned out by KidsSTOP, Science Centre Singapore.
3. Who can go for the KUBO training?	The training is reserved for registered team coaches only. Each team can send up to 2 coaches to attend the training.
4. Do we have to purchase KUBO sets?	1 set of KUBO Coding Starter Set and one set of KUBO Coding+ will be loaned out for free to each team. Teams will be required to return the loaned sets in good working condition at the end of the competition.
5. When will we receive the loaned KUBO Sets?	A Form will be sent out to all registered teams to indicate their availability to collect the KUBO sets from KidsSTOP. The date of collection will be from 9 – 12 May 2023. Teams who have registered for the competition after May will be notified separately.
6. Who can I contact if I have questions regarding KUBO and its coding functionality?	Duck Learning (competitions@ducklearning.com)
7. What happens if one of the KUBO components becomes non-functional?	Refer to equipment liability information under Section 3.4 of the Challenge booklet.

8. How do we return the KUBO sets?	The KUBO sets will be collected back on 28/29 August 2023 at the competition venue, after the team has completed the Onsite Challenges.
9. How long can the KUBO robot work after it is fully charged?	Depending on the intensity of the usage, the KUBO robot can run for approximately 1 hour. Fully charged KUBO robots and portable chargers will be made available during the onsite competition. All teams are reminded to charge their KUBO robots fully for the onsite competition.
Carrier-related	
1. What kind of materials can we use to create the carrier for the KUBO robot?	Teams can use any materials to create their carriers as long as the adhesives do not damage the robot. Adhesives such as masking tape, scotch tape and blue tag are suitable. Teams are **highly encouraged** to use recyclable materials to fabricate their carriers to assist the KUBO robot in completing the missions.
2. Does each carrier need to be different for each mission?	Each design/carrier of the KUBO robot needs to be unique for each mission and should not be re-utilised for any other missions. This is to encourage teams to express their creativity. There is an additional award for the Best KUBO Robot Design.
3. How much time are teams given to change their robot carriers in between missions?	Teams will be given a buffer time of **5 minutes** in between missions to change the carrier for their KUBO robot.
4. Can students design items to be attached to KUBO to help move things?	Yes, teams can design things/carriers/items that can be attached physically to KUBO to help move the game objects to the destinations. A gentle reminder to bring these items for the actual competition.
5. What is the maximum size of the carrier for the KUBO robot?	There is no maximum size so long as KUBO can complete Missions 1 – 4. For mission 5 (Harvesting Solar Energy), the solar panel fabricated by teams should be **at least** 8cm (width) x 8cm (length) and **not exceed** 8cm (width) x 12cm (length).
Online Presentation Round (21/22 August 2023)	
1. What do the teams need to present in the online presentation?	Please refer to Section 7.1 of the Challenge Booklet to find more information and the rubrics of the Online Presentation. The online presentation is meant to showcase their learning process, share coding & design of KUBO, reflection and Q&A. Teams may use various presentation aids such as slides, props, scripts etc. to showcase their ideas. A maximum of 3 questions will be asked during the Q&A, and these questions are found in the challenge booklet (refer: Section 9, Appendix A). Teams are to ensure proper equipment is ready for the online presentation to allow audio and video to be captured during the allocated timeslot.
2. How long is the presentation?	Actual presentation: 5 minutes + 3 minutes of Q&A. Teams will be notified of their allocated time slot.
3. Can parents or other staff from the school seat in for the presentation?	Yes, kindly inform the organizing team about it. The Zoom link will be sent closer to the date.

4. Will there be a tech check?	A tech check will be done 10 minutes before the team's scheduled time slot for the presentation, in a separate zoom room (e.g., Present at 10.10am, tech check at 10am). After which, teams will be directed to the main room for the presentation. Staff will be present online to assist you. Teams will be shared the zoom links to the tech check and presentation room nearer to the day of online presentation.
5. We are given a group number; do we need to remember it?	Yes, please take note of the allocated group number as we will be using the group numbers on the day of onsite mission as well.
Onsite Competition Round (28/29 August 2023)	
1. What do teams need to prepare before the onsite mission?	Teams are to bring their loaned KUBO Coding Starter set, KUBO Coding+ set, game field objects, Game Field Map 1 and all other materials such as carriers you will need them to complete the missions. Teams must use the loaned KUBO sets for the competition.
2. What happens if the KUBO sets loaned to us are not working?	Please contact the NRC Preschool (KUBO Challenge) team at KidsSTOP™. The NRC Preschool team have working robots as well if the KUBO set provided is not working on the day of competition.
3. How long is the onsite mission?	The On-site Competition round will be approximately 100 minutes (including 20 minutes practice time). Teams will be notified of their allocated date and time slot. Participants will be ushered to the playfield/practice areas upon arrival and during competition.
4. Can teams bring notes to the competition venue?	The competition is meant to encourage preschoolers to code and have fun in the process, physical notes and verbal help are allowed. Points will be deducted when there is physical interference from the coaches. For example, when coaches touch the game objects, Tagtiles, play field mat and KUBO etc. Coaches are allowed to touch the game objects, Tagtiles, play field mat and KUBO during the 5-minute buffer time in between missions.
5. During the practice time, do the students get to see the play field and test out their robots prior to the actual challenge?	All teams will be given a 20-minutes practice run at the practice area to test out the items that they have prepared for the competition. Teams can try out Missions 1-4 in the practice area.
6. Before the start of the actual challenge, will the game objects be set on the playing field?	Yes, game objects for each mission will be set up on the playing field by the referees prior to the start of each mission run.
7. Do the game time for each mission include the time required to code KUBO?	The game time is inclusive of KUBO coding time and laying down of the TagTiles. The timing will start when the host says, "Start of Mission x".
8. If KUBO turns purple and gets stuck while reading the code outside of game field, will students be able to move and realign KUBO to re-read the TagTiles?	If there is an error while KUBO is reading the code outside the playfield, students are allowed to move KUBO and read the code again. If KUBO is inside the playfield and encounters an error while the code is running, the students will need to inform the referee to determine if the team can reset the code. Otherwise, no interference is allowed.
9. KUBO starting position of each mission is indicated in the challenge booklet – scoring rubric. Can students change the orientation of KUBO prior to the start of the mission?	KUBO is to be placed at a 90-degree angle within the grid and can only face the 4 sides of the grid. No diagonal placement of KUBO is allowed on the playing field and should not be oriented to travel diagonally across the grids. Students are allowed to change the orientation of KUBO before the mission starts. However, teams are reminded that they are not allowed

	to change the grid position of KUBO. The starting grid position of KUBO for each mission has been indicated in the scoring rubrics in the Challenge Booklet Section 7.2.
10. Students are not allowed to touch KUBO when it is executing its command. What if I realized the KUBO code is wrong or stuck, can I stop KUBO, remove the head and reset it?	When KUBO is inside the game field and the code is running, no interference is allowed. In the event that KUBO is stuck, or a wrong code has been entered, students must inform the referee and will be allowed to make changes to the code and continue with the mission. However, do note that time will continue to run.
11. Points are given if coaches do not interfere. Does verbal advice from coaches count as interference or only physical help?	Interference from coaches refers to physical help only (verbal guidance is allowed). However, if coaches touch any of the game materials (KUBO, TagTiles, coding sets, game field, game objects etc.) it will count as an interference.
12. Will all props be placed on the mat at the start or only the ones relevant to the mission? For example, Mission 1: only the plastic container is on the mat.	Only the relevant game objects related to the mission will be placed on the mat by the referee. After each mission, the game objects will be cleared from the mat.
13. Are all starting positions random or fixed?	All starting positions are fixed. Please refer to Section 7.2 of the Challenge Booklet for more details.
14. Why is there a 5-minute break between each mission?	Referees will be taking the time to replace the game objects for the next game mission. Teams can take this time to redress KUBO for the next mission. Dressing of KUBO does not count into the time for coding. Teams can also lift KUBO up and place it at the start of the next mission.
15. If any of the game objects falls, can students touch it? Who sets it back again properly?	Students are not allowed to touch the KUBO robot or the game objects when the code is running for the robot. However, students may inform the referee to reset the game objects. Do note that the time will continue to run.
16. Can the game objects on the game mat be moved?	The game objects will be placed at their respective positions prior to the start of each mission by the referees. Teams are not allowed to touch the game objects during the mission run when KUBO is still running its code. Teams may only touch and transport the game object onto KUBO's carrier when KUBO has stopped running its code. Points will be awarded if game objects are transported hands-free during the mission (Refer to Section 7.2).
17. Can we touch KUBO?	Teams are not allowed to touch the KUBO robot when it is moving on the game field or when the code is still running (inclusive of pauses in the codes). Teams may move KUBO after the code has stopped running to read another set of code if required.
18. Does KUBO need to stay within the play field grids?	It is alright for KUBO to veer slightly off the grids. As long as KUBO reaches the destination and is within 1 grid radius of any game objects for all missions, the point will be awarded to the team.
19. Can KUBO move on the pavement or anywhere on the play field grids?	KUBO does not have to strictly follow the road printed on the map. It can take any route on the grid of the mat as long as it completes the mission.
20. Can KUBO move diagonally?	TagTiles provided will only allow KUBO to turn 90-degrees or 180-degrees. No diagonal travel or positioning is allowed for this Challenge.
21. KUBO is not always aligned; how do we know if we scored the point?	The team will score the point when KUBO reaches within a 1 grid radius of the destination. For example, if KUBO reaches within a 1 grid radius around children's playroom (G13), the point will be awarded to the team.

22. If KUBO goes off course due to placement issue, can the team reset KUBO before the game continues?	Teams can inform the referee to correct KUBO's orientation by placing KUBO at the original starting position before continuing with the mission. Time continues to run. It is recommended to split the codes into shorter portions to better control KUBO to complete the mission.
23. Is it alright if the game objects fall down when KUBO reaches the grid where the game object is placed?	Yes, it is alright.
24. When KUBO starts moving on the play mat, will the referee remove the play tile or the play tile will remain on the mat until the mission ends?	The play tiles will remain on the mat until the mission finishes. Teams are to required to inform the referee to stop KUBO and rearrange the play tiles. When KUBO comes to a complete stop (i.e. KUBO finish executing the sequence/code), teams can pick up KUBO to place a tile underneath or pick up the play tile to lay out a new sequence or code. Teams will have to replace KUBO in the orientation it had stopped at. No points will be deducted in this scenario.
25. Are participants allowed to add things to the game objects?	No alterations and adjustments can be made to all game objects. On the day of competition, teams will be using a new set of game objects for the actual competition.
26. Do we need to follow the scoring rubric in order?	You will need to follow the missions in order. The host will announce the missions in order as stated in the Scoring Rubrics.
27. How is the final score counted?	The final scores will be based on the scoring rubrics shared in the Challenge Booklet. This is made up of the score from the Online Presentation Round and the score from the Onsite Competition Round. Points gained from the additional prize categories (Best KUBO Robot Design & Best Teamwork) will not be counted to the final score as these are additional categories.
28. When will I know my team's result for the onsite mission?	Teams will be notified by 1 September 2023 so that they can make arrangements to come for the awards ceremony on 9 September 2023.
29. Can I get tickets to watch the competition? Can parents watch the onsite mission?	There are no bystander tickets, but walk-ins are allowed. There will be a designated space for the audience to view the competition. Parents are to inform the organising team upon arrival onsite that their child is participating in the competition and will be ushered to the audience area. Staff members reserve the right to confirm the identity of the parents with the teachers, to protect the students. The audience area will be demarcated, and members of the audience are not allowed entry into the competition and practice area.
30. Is there a limit to the number of audiences watching the competition on-site?	There are 100 audience chairs available on a first come first serve basis. No reservation of seats will be taken or allowed at the venue.
31. Does the KUBO robot have to complete the mission in 1 go?	KUBO robot does not have to execute all the movements at the same time to complete the mission. Teams can break down into smaller segments. However, teams are not allowed to touch the game field mat or any items on it while the KUBO robot's programme is running. The judge will give a verbal warning to the team and after 2 verbal warnings, the Organiser reserves the right to not score for the mission.

Question	Answer
CoderZ - Account	
1. Is there a demo or free account for CoderZ?	Yes, students can create a free CoderZ account to practise coding and familiarise themselves with the CoderZ platform in preparation for the competition. 1. Go to https://gocoderz.com/courses/amazon-cyber-robotics-challenge/ 2. Scroll down and click on "Create Individual Student Account" The solution videos can be found at the following link: https://bit.ly/CoderZACRCSolution.
2. My school is signing up CoderZ accounts, should we sign up Cyber robotics pack or Spike prime pack for CoderZ?	Depending on the student's age and coding experience, the various CoderZ module packs are suited for different levels. CoderZ Adventure (Spike Prime): Novice, 15hours (Primary) Cyber Robotics 101: Beginners, 20-25hours (Primary) Cyber Robotics 102: Intermediate, 20-25hours (Secondary)
3. How much is the individual student account for CoderZ inclusive of GST?	Schools will need to purchase at least 30 students' accounts for 12 months usage. The accounts are purchasable here. Alternatively, you may sign up for the upcoming CoderZ Preparation Workshop conducted by Duck Learning ($38.38 including GST). The dates of the workshops are: 15 June – Primary 16 June – Secondary 22 June – Primary 23 June - Secondary For further enquiries, please email learn@ducklearning.com.
4. Does every student need to get an account? For a team of 6, do we just need 1 account or 6 accounts?	CoderZ accounts are not meant for sharing, each student will need to have a CoderZ account each.
5. The students already have a CoderZ account, will another account be generated for them to use for the competition?	Yes. An account to CoderZ Coding Challenge platform, CoderZ League in a Box, will be given to each team member a few days before the actual competition day. The login details for each team member will be emailed to the respective Teacher/Parent in charge (email is based on the details given in the registration form).
CoderZ – Competition	

Question	Answer
1. Can we use our chromebooks for the CoderZ?	Yes, CoderZ platform is compatible for use on Chromebook. You may refer to the challenge booklet (4. Computer Requirements) for more information on the specifications required.
2. Do I need to switch on my webcam during the challenge?	Yes. Every team member is required to be online on their own computer or laptop and turn on the camera function on the Zoom platform throughout the competition unless stated otherwise.
3. Is the competition online or at Science Centre?	The CoderZ competition will be held fully online via Zoom.
4. Any advice on what software knowledge is required in CoderZ?	No prior knowledge is required although experience in any block-based coding software may help.
5. Is CoderZ done web-based or app-based (with installation)?	CoderZ is a fully web-based programme; no installation is needed. You may refer to the challenge booklet (4. Computer Requirements) for more information on the specifications required.
6. Is there any python-based format for CoderZ? What is the format of CoderZ?	There is no python-based coding for CoderZ. The format for CoderZ is block-based.
CoderZ – Recap of CoderZ	
1. Will we have an estimated timeline for the recap in the morning?	CoderZ Competition Timeline: 9am - 930am: Briefing 930am - 1030am: Recap of CoderZ I 1030am - 1045am: Break 1045am - 12pm: Recap of CoderZ II 12pm - 1pm: Lunch Break 1pm - 4pm: CoderZ Coding Challenge 4pm - 415pm: Debrief
2. What would the morning CoderZ recap cover?	In the morning CoderZ recap, students will go through a collection of sample missions, providing students with the opportunity to familiarise with the coding platform and covers central concepts they will need to use in both missions and challenges. The missions covered during the session will not be a duplicate of the free CoderZ account online.
3. Is the morning session compulsory?	The briefing is compulsory unless there are valid reasons made known to the organisers beforehand as we will be taking attendance and going through the competition format and rules. The recap will be optional but highly encouraged, especially if the students have no prior experience in our CoderZ Coding Challenge as the content covered will be relevant and useful for the actual competition.

Question	Answer
	Kindly email to NRC@science.edu.sg to let us know if the team is unable to join the briefing and/or recap beforehand so we can take note and make the necessary arrangements.
CoderZ – Registration	
1. Can I register as a private team even though I am joining from my school?	Yes, you can register as a private team.
2. I am an individual. Will I be assigned into a team?	Yes. The organisers will assist to group you into a team. Number of team members required is 6.
3. Can I register for more than 1 category? Is there a maximum no. of teams each school can register for?	Yes, if the dates are not overlapped. There is no maximum no. of teams a school can register.
4. Can a child take part in Robot Run and CoderZ if there is a time clash?	Yes. Do drop us an email if you intend to do so. We will schedule your Robot Run and CoderZ Competition days differently.
Others	
1. Is it mandatory to join all the competitions?	No, it is not mandatory to join all the competitions, you may wish for the category that interests you the most.
2. If we are in a school team, is the fee waived?	No, the registration fees will not be waived.
3. Can team members communicate during the competition?	Communication is allowed throughout the competition (both during recap and during actual competition) **between team members only.** Communication **with others** such as teachers, mentors, coaches, and members of another group, is allowed during the morning recap session but not for the competition. Such communication during the competition will only be allowed if necessary and with approval from the facilitator.