



SAM Labs IOT Cargo Primary Category Game Description, Rules and Scoring

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A. Brief

A1. Team consists of one to three members. Only one player can control and load the beverages during the competition.

A2. Design a scientifically powered truck which is controlled by program. The truck can pull the cart carrying beverages to the finish line within a limited time. Give full play to the spirit of STEM+ through simple programming logic, students will make scientific power machinery trucks for competitions.

Understand the relationship between power and structure, gear usage, ratio calculation and application of wheels and shafts, friction, centre of gravity configuration and stacking skills etc. combined to understand real-life applications.

A3. Participating age: Participating members must be 6-10 years old (birth date in 2023 season is 2013-2017).



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B. Game Rules

B1. Playfield mat measuring approximately 1800mm x 600mm.

B2. Participant will have 2 minutes to connect their bluetooth wireless devices and load the beverages onto the cart before starting.

B3. The competition time is limited to 1 minute.

B4. The program or switch can only be activated when the referee announces the start. At this time, the truck must go to the finish line automatically. Violators will be disqualified from the competition.

B5. Control panels and computers are not considered as part of the truck.

B6. Participant is not allowed to specify the brand and flavor of the beverage to be loaded. When loading the beverage, the straw on the beverage is not allowed to be removed. Beverages (100ml - 400ml) are provided by the organizer.

B7. The carrying distance is about 100~150cm (the actual distance will be announced on the day of the competition).

B8. Task complete: The truck and cart arrive the finish line within the limited time.



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B9. The size of the truck must not exceed 25cm x 25cm x 25cm.

B10. There must be a circular hole structure with a diameter of about 4~4.5mm in the centre of the rear end of the designed truck to facilitate the hanging of a rope hook. The rope hook is provided by the organizer.

B11. Teams can pre-assemble the truck and the control program.

B12. Teams must bring their own computers/tablets and remote controllers for the game.

B13. SAM Studio or SAM Space software must be used to control robots.

B14. Truck is to be constructed using strictly STEM+ Robotics Kit Set only.

B15. Truck can only use original electronic parts of SAM Labs, the number of motors is limited to one, and the number of sensors is limited to one (RGB sensor).

B16. No other building materials can be used, including glue, tape, screws etc.

B17. The organizer will not provide power supply. Please reserve the power supply by yourself.

B18. The cart and beverages (100ml - 400ml) will be provided by the organizer on the competition day.

B19. There will be a simulation before the competition. Each simulation is limited to 2 minutes.



C. Scoring

C1. Those who complete the task will determine the ranking order according to the number of drinks carried (1 pack = 10 points).

Teams with the same total, the one with the shortest finishing time will be the winner.

C2. Each team has 2 minutes to introduce their model design and program, its advantages and impressions (included in the evaluation: total score 100 points).

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