CODEAVOUR 7.0
INTERNATIONAL

Track 2 - Wellness Wave AI-Robo Challenge

Rules and Regulations

Leveraging AI and Robotics to Build
a Healthier Tomorrow

VERSION 1
Date: 22th August, 2025

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1. Introduction

Engage in a thrilling competition where your Artificial Intelligence (AI) powered robots navigate the competition arena, taking up the **Wellness Wave AI-Robo Challenge**. Ride the Wellness Wave as you restore balance, nurture healthy habits, and guide the Revoris Island toward a future of vitality and well-being. Showcase your expertise in AI, Robotics, Machine Learning, and Intelligent Systems and gain valuable insights along the way!

In the Codeavour 7.0 International, Track 2, the **Wellness Wave AI-Robo Challenge** is a physical robotics competition. The participants will design and build their own **Robot with Quarky** to complete various object placing and other interactive challenges.

In Track 2, your robot will help develop, repair, and manage the ecosystem of the Revoris Island in the different **Wellness Wave AI-Robo Challenges**.

The robot control can be **Autonomous** (programmed to follow a predetermined path using the line-following techniques) or **Manual** (directly controlled using your device) and must be Do-It-Yourself (DIY).

Codeavour International helps students develop their 21st-century skills and creativity in the following areas:

- Coding
- Robotics Concept
- Engineering Skills
- Artificial Intelligence
- Strategy and Planning
- Real-world problem-solving

1.1. Eligibility Criteria

You must adhere to these guidelines:

a) Each team can have a **maximum of three members** and must have one adult mentor/coach/guardian.
b) The age groups for track 2 are as follows:
    - **Elementary:** 7-10 Years
    - **Junior:** 11-14 Years
    - **Senior:** 15-18 Years

Note: All the participants must meet the age group and team size criteria.

1.2. How to Register

To register for this competition, participants must visit the Codeavour 7.0 International website and complete the registration process.

Registration Link: https://codeavour.org/register-now/

Complete your team registration to participate in the world's biggest Coding, AI and Robotics Festival for students!

t.ly/CI7RegWeb

1.3. General Rules and Regulations

In order to ensure a seamless and enjoyable experience for all, participants are recommended to strictly adhere to the established rules and regulations.

- The robot should be programmed using **PictoBlox** only. Participants can use any coding environment inside the PictoBlox.
- The participants must only make a robot using **Quarky** series of Products.
- Each team must have their own distinct robot adhering to the provided material and regulatory guidelines. Sharing robots across multiple teams is strictly forbidden and could lead to disqualification.
- Participants must maintain discipline and follow the competition rules and regulations of the competition management authority. Any individual found violating the rules or causing disruptions may result in the disqualification of their team.
- Mentors, coaches, teachers, parents, or guardians are not allowed in the competition area, and must not be **directly involved** in controlling or manipulating the robot during the competition. Their role is limited to providing mentorship and guidance only. Any direct involvement in robot control will result in the team's disqualification.

1.3. Learning Resources

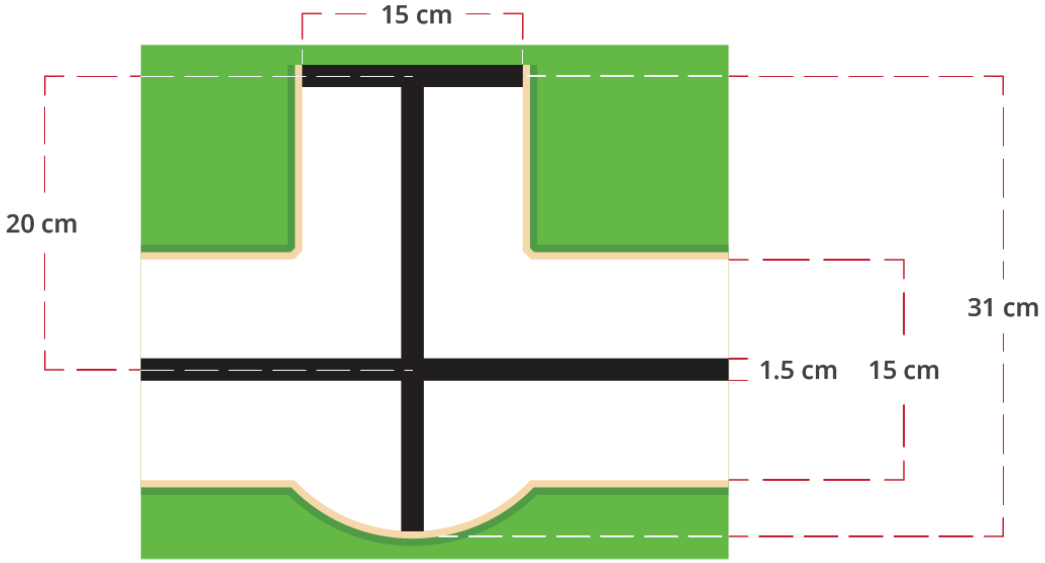
Participants can access learning resources on the Codeavour 7.0 official website, which offers e-learning resources for Coding, AI, Robotics, Machine Learning and more.

t.ly/C7T2LR

2. Game Arena and Specifications

Game Field Size: 45 in x 93 in

- Width of the white path: 15.0 cm
- Width of the black line: 1.5 cm



Pathway Dimensions

The arena, printed on high-quality **Grey Back Vinyl**, is clearly marked with red dashed lines for **Pick-up Points** and green dashed lines for **Drop Points**. Cubes are initially placed at the Pick-up Points and must be transported by the robot to the corresponding Drop Points as part of the challenge.

The size of Pick-up and Drop Points may vary depending on the activity and the objects used. Detailed information is provided in Section 4 (**Wellness Wave AI-Robo Challenges**).

2.1. Arena for Wellness Wave AI-Robo Challenge

2.2. Game Objects, Positioning, and Randomization

A variety of objects are strategically placed within the arena for the challenges, with each element tailored to the specific task. These objects may include small cubes equipped with rings, as well as distinctive cubes with unique appearances. Additionally, the arena will feature mechanical elements that robots must interact with, as outlined below:

2.2.1. Game Objects

Quarky Cubes and Small Cubes with Ring

Participants can use various methods such as Pick, Grab, Push, Pull, and more to move the cubes and complete the challenges.

1. Antivenom

2. Vaccine

3. 'A Positive' Blood Bag

4. 'B Positive' Blood Bag

5. Blood Report 'A Positive'

6. Blood Report 'B Positive'

7. Number 1

8. Number 2

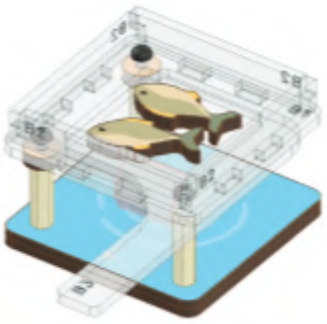
9. Coconut

10. Water Sample

Unique Mechanisms and Objects

Activities with unique objects are special activities where the robot must interact with unique objects or adjust the orientation of its mechanisms. At the start, each unique object and mechanism, labelled from A to E, will be positioned in specific locations within the arena. During the game, the robot will engage with them to complete the challenges.

(A) Roliver



(B) Aquarium

(C) Coconut Tree

(D) Pharmacy

(E) Traffic Cones

2.3. Arena Setup

The Wellness Wave AI-Robo Challenge arena has a common setup for both Elementary and Junior/Senior categories, with the only variation appearing in AI Challenge 7.

For detailed instructions on assembling the arena and positioning the game objects, please refer to the Arena setup guide.

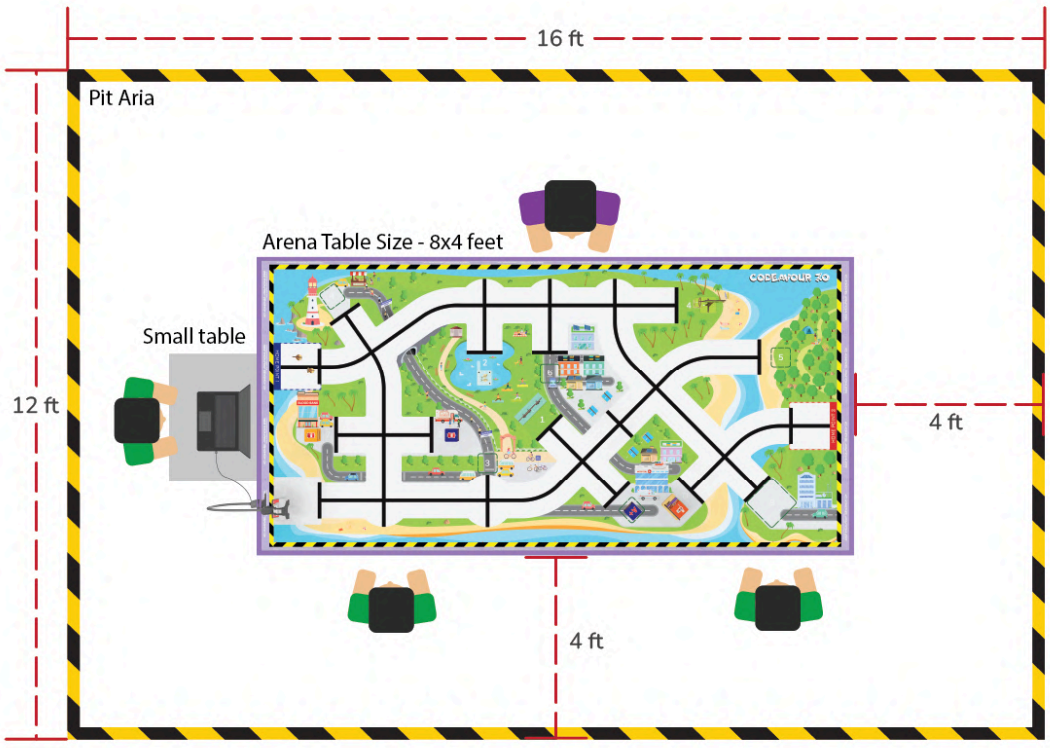
t.ly/C7T2ArenaSetup

- **Initial Configuration:**
  - All game objects, except the object 'E' traffic cones, will be arranged in the arena according to the setup diagrams provided below.
  - Object 'E' Traffic cones will be provided to the team and the team can load it on their robot when the robot is on any of the Home Points.
  - Before the match, the judge will place any one out of two types of cubes based on the results of the 'Decision Coin' toss for Challenge 7.
  - The Quarky Cubes and Small Cubes with Ring will be positioned at the Pick-up point from where the robot has to place them as per the challenge.

Initial positions of game objects (Elementary)

Initial positions of game objects (Junior/Senior)

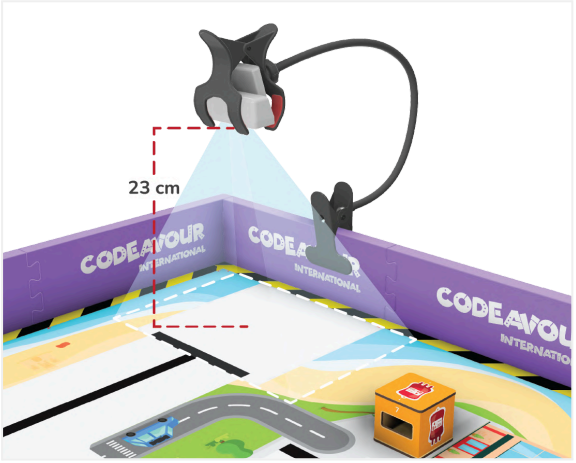
- **Pit Area:** The pit area will be marked with yellow and black floor marking tape. Team members will have a designated area of 4 feet around the arena inside the pit for their movement and observations.
- **Device table:** Team will get a small table near the Camera Point to keep their device connected with a webcam.



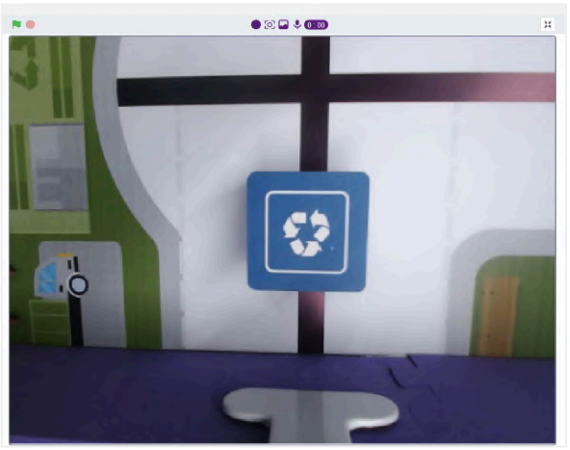
Arena Pit Area

2.3.1. Camera Setup

A web camera will be placed on the recognition point in the arena at a height of 23 cm from the arena.



Camera Position



Camera Field of View

Note: The participant(s) must consult with the judge regarding the camera configuration. They are not permitted to handle or adjust the camera mount/camera before or during the match.

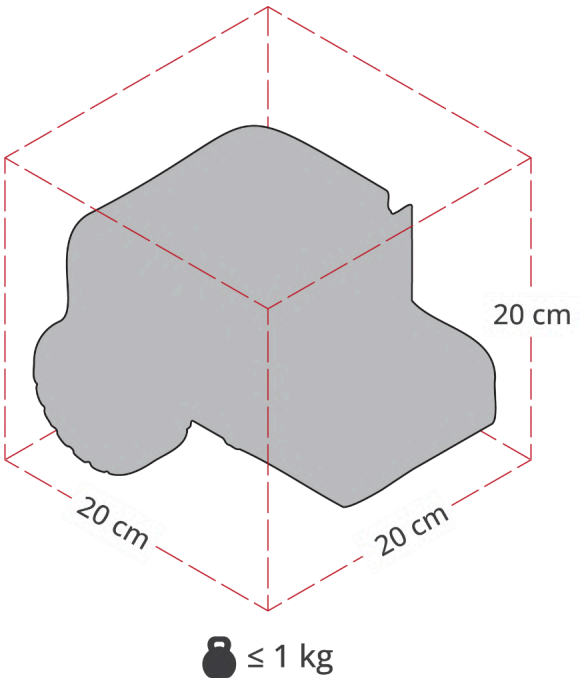
2.3.2. Camera Specification

Connection Type: Wired, USB 2.0
Camera FOV: DFOV 95°
Capture Resolution: FHD (1920 x 1080)
(Recommended camera: Lenovo 300 FHD Webcam)

3. Robot Material and Regulations

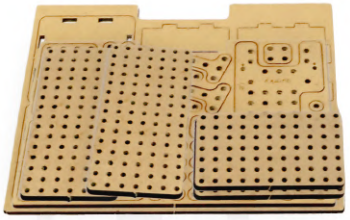
A comprehensive list of all permissible hardware components brought by the team to the competition, including the robot, accessories, and any additional attachments, is provided below. The entire robot design must strictly adhere to the specified guidelines:

1. **Hardware/Microcontroller:** Anything from the Quarky Series of Products can be used.
2. **Programming Software:** PictoBlox (Participants can use different environments available in PictoBlox).
3. **Power Supply:** A robot must be battery-operated at the time of competition, and the voltage must not exceed 5 volts between any two terminals of the Robot.
4. **Add on Boards:** Anything from the Quarky Series of Products can be used.
5. **Robot size:** The robot must be at most 20x20x20cm (LxBxH) in size. However, the robot can expand itself while in the game.
6. **Maximum Weight:** Maximum 1kg.
7. **Communication:** The robot must be wirelessly connected to PictoBlox via Bluetooth.

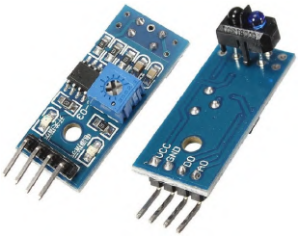


8. **Add-on Parts:** Participants are free to choose the additional sensors and construction components as per their robot design (3D printed parts, Laser-cut parts, Lego components, Ice Cream sticks, and more).

Lego pieces



MDF parts



4 Pin IR sensor

Note: *You can use any sensor compatible with the Quarky series.*

The team must bring all the necessary components and tools. This includes extra batteries, power extension cords, a soldering kit, glue, fasteners, etc.

The Robot design must not damage the game field or any of the articles in the game field in any way.

9. **No exposed sharp edges:** The entire design of a robot must not have sharp edges that may harm the game field or the people around it.
10. **No hazardous materials:** The Robot parts shall not be made with hazardous materials.

4. Wellness Wave AI-Robo Challenges

The Wellness Wave AI-Robo Challenge takes you to a vibrant Revoris Island that is facing health and wellness hurdles. Once full of energy and balance, the Revoris Island now needs fresh ideas to bring back healthy habits, safe water, good nutrition, and better healthcare for its people.

As innovators, your mission is to guide your robot through different tasks that promote well-being, safety, and care. Each challenge represents a real issue from our everyday lives—like staying active, preventing diseases, or ensuring access to clean water—and gives you the chance to solve it with creativity and technology.

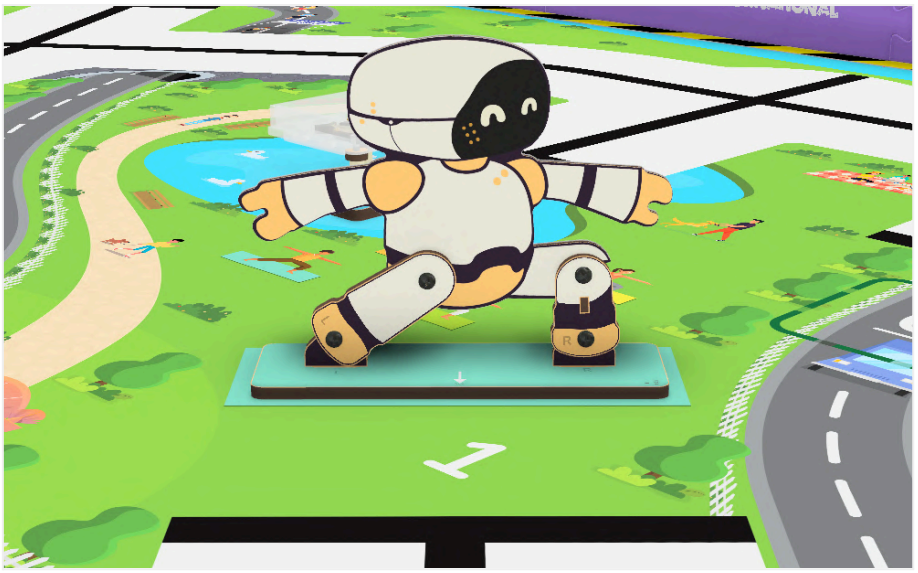
In total, there are **8 exciting Wellness Wave AI-Robo Challenges**.
Each one will test your technical skills, teamwork, and problem-solving abilities, while also inspiring you to think about how technology can improve lives.

Teams are free to plan their own strategies and decide the order in which to attempt the challenges. The path you choose is part of your unique journey to make Revoris Island thrive again!

4.1.1. Challenge 1: Yoga

Yoga, an ancient practice, is a powerful tool to restore balance. It not only improves flexibility and strength but also calms the mind and enhances focus. To inspire the citizens of the Revoris Island to adopt a healthier lifestyle, a public demonstration is being organized to showcase the benefits of daily yoga.

Your task is to use your robot to move Roliver's hand and leg to change his yoga posture from Virabhadrasana (Warrior Pose) to Trikonasana (Triangle Pose).



Challenge 1: Initial Position

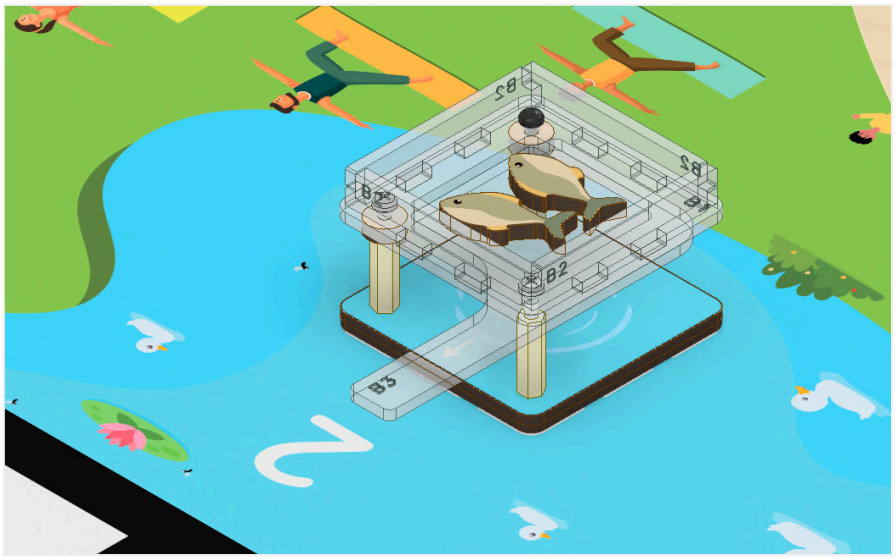
Challenge 1: Final Position

4.1.2. Challenge 2: Mosquito Prevention

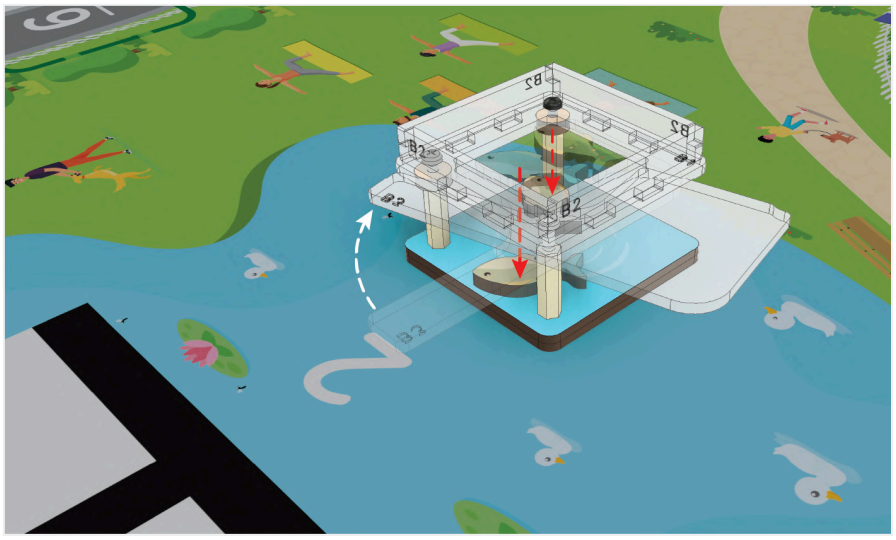
Mosquito-borne diseases like dengue and malaria are spreading rapidly across the Revoris Island, especially in areas with stagnant water. These diseases pose a serious threat to public health, affecting children and adults alike. One of the most effective eco-friendly solutions lies in nature itself, the Gambusia fish, also known commonly as mosquitofish.

Mosquitofish feed on mosquito larvae and help control their population without the need for harmful chemicals. By introducing them into local water bodies, we can reduce the spread of disease and restore a healthier environment.

Your task is to use the robot to open the aquarium valve and release the mosquitofish into the lake by pushing the lever.



Challenge 2: Initial Position



Challenge 2: Final Position

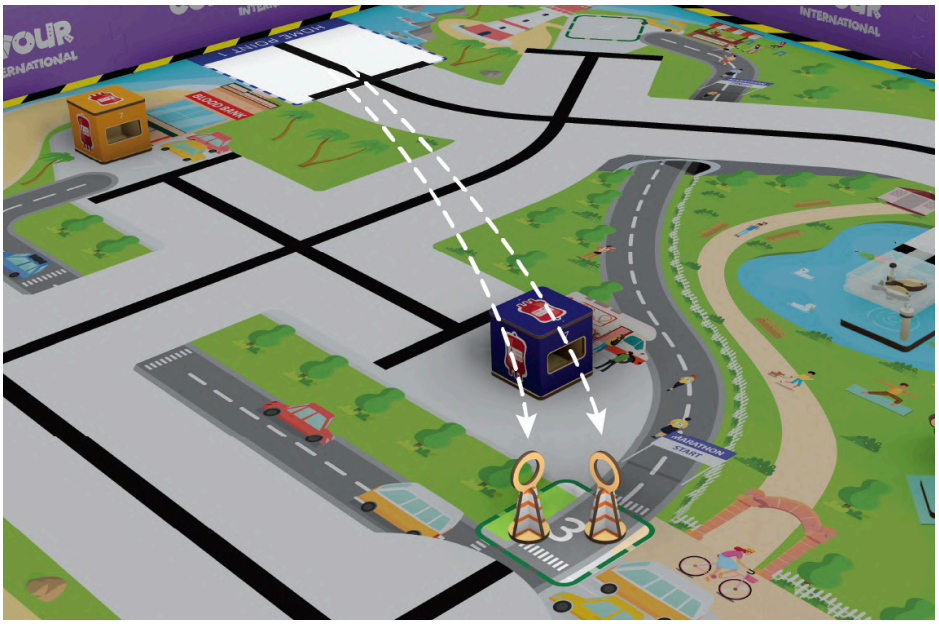
4.1.3. Challenge 3: Organizing the Marathon

The mayor has organised a marathon across the Revoris Island starting from Yoga garden and finishing at the edge of the island near the Light House. It is more than just a race, marathon running builds physical strength, improves heart health, sharpens mental focus, and strengthens community bonds. It is a celebration of endurance, resilience, and unity for a noble cause.

However, safety is the top priority. With roads crisscrossing the marathon route, vehicles must be kept away from the track to prevent accidents and ensure that every participant can run without worry.

Your task is to use your robot to place the traffic cone provided to you in drop point 3 to close the path so that no vehicle can enter the marathon track. The team can load the traffic cone on the robot directly in the beginning or after the challenge starts at any of the home points.

Challenge 3: Initial Position



Challenge 3: Final Position (*illustrations are as per the Home Point 1 only)

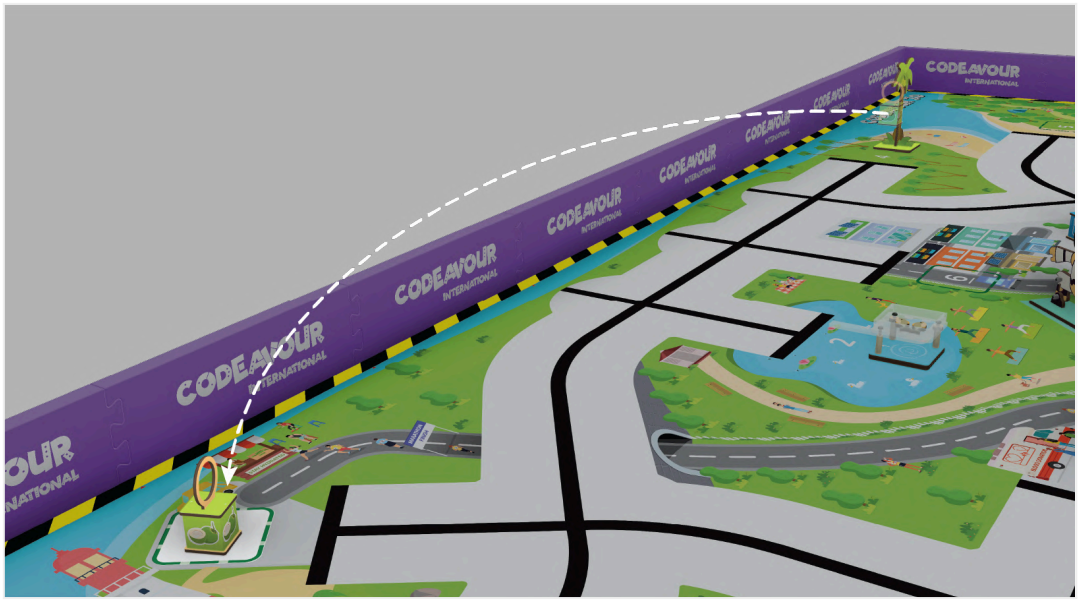
4.1.4. Challenge 4: Staying Hydrated

As hundreds of runners participate in the marathon, ensuring their health and safety becomes a top priority. At the finishing line, healthy snacks and drinks have been arranged. But there's a shortage of a vital natural hydrator 'Coconut water'.

Coconut water is rich in essential electrolytes and helps restore energy, making it the perfect remedy for dehydration after physical activity. Supplying fresh coconuts in time is crucial to keeping the participants healthy and refreshed.

Your task is to use your robot to collect coconuts from the coconut tree and deliver them to the refreshment stalls near the marathon's finishing line.

Challenge 4: Initial Position



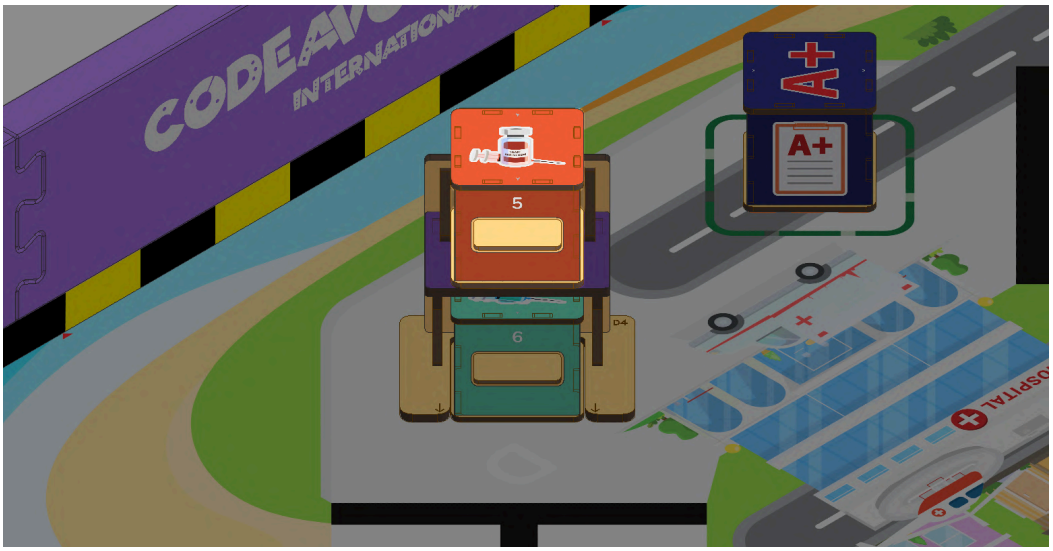
Challenge 4: Final Position

4.1.5. Challenge 5: Snake Bite Rescue

The northeast side of the Revoris Island is home to a dense, wild forest that attracts adventure lovers for trekking and exploration. But hidden among its beauty lies danger — venomous snakes inhabit these woods, and an unexpected encounter can quickly turn life-threatening.

Today, a hiker has been bitten by a snake on a jungle trek. Without swift action, the venom could cause severe harm or even claim a life. The only hope is to get antivenom to the victim as quickly as possible.

Your task is to use your robot to collect the Antivenom from the Pharmacy and deliver it to the person who was bitten by a snake near the forest area.



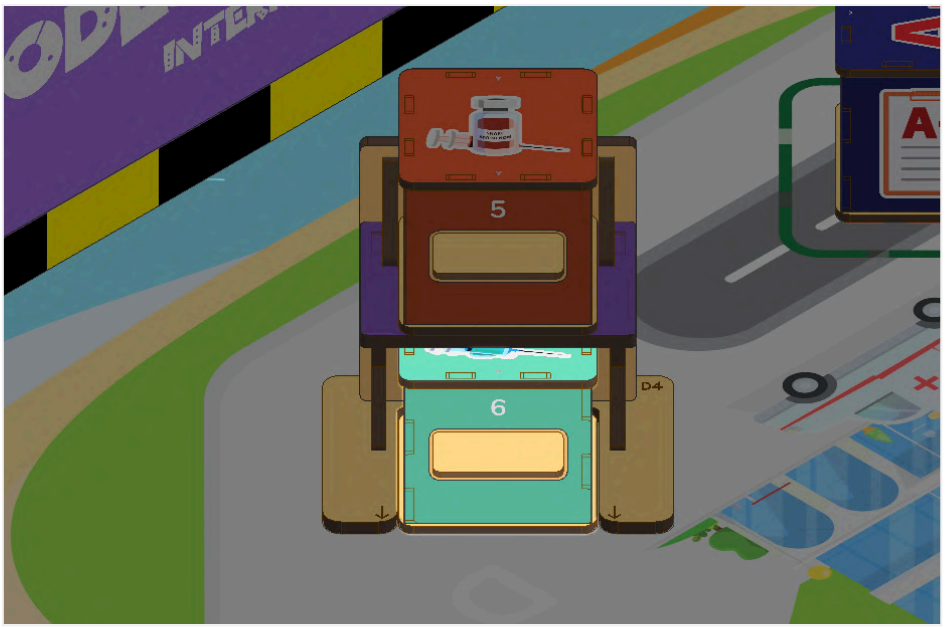
Challenge 5: Initial Position (Antivenom is at top of the Pharmacy)

Challenge 5: Final Position

4.1.6. Challenge 6: Vaccination

Vaccination is one of the most effective ways to protect communities from dangerous diseases. On the island of Revoris, a public health campaign is underway to ensure that every child receives the life-saving polio vaccine. Immunization not only safeguards individuals but also helps prevent the spread of disease, protecting the entire population.

Your task is to use your robot to collect the vaccine from the pharmacy and deliver it to the residential area so that residents, especially children, can be vaccinated.



Challenge 6: Initial Position (Vaccine is at bottom of the Pharmacy)

Challenge 6: Final Position

4.1.7. Challenge 7: Identify the Blood

An accident victim has been rushed to the hospital in Revoris Island and urgently needs a blood transfusion. But blood is not one-type-fits-all — there are eight major blood groups: A+, A-, B+, B-, AB+, AB-, O+, and O-. Receiving the wrong type can cause life-threatening complications.

Before the transfusion, the patient's blood group must be identified so that the correct blood can be sourced from the blood bank. Time is critical, and accuracy is essential.

Your task is to collect the report from the hospital and use AI to scan it at the camera point to determine the necessary blood group. After that, the robot must collect the appropriate blood from the blood bank and return it to the hospital.

Conditions:

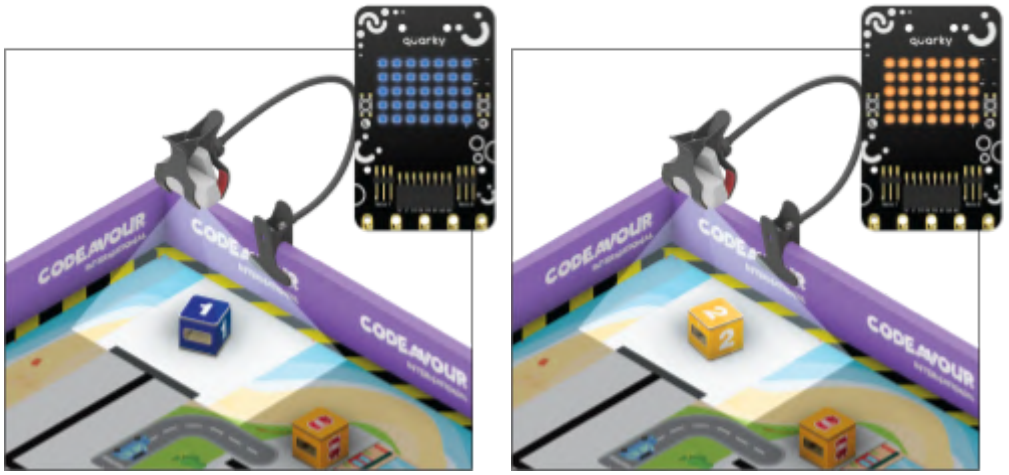
- Before starting, the judge will toss the Decision Coin and place one of two cubes (based on the age group) on the Pickup Point 7 Hospital based on the result of the coin toss.
- There is no specific drop point for the recognition cubes (Number 1, Number 2, Blood Report 'A Positive', Blood Report 'B Positive'). The challenge will be only scored based on the placement of the 'A Positive Blood Bag' and 'B Positive Blood Bag' cube as per the conditions.

Decision Coin

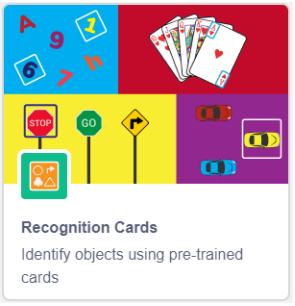
- **Elementary:**
  - Robots must either use the AI-based 'Recognition Cards' extension or a self-trained model in the ML Environment (Image Classifier or Object Detection in PictoBlox) to identify the 'Number 1' and 'Number 2' cubes, collect the corresponding blood from the blood bank, and deliver it to the hospital. Attempts without using any of these will receive no score for this challenge.
    Recognition cubes for Elementary team:

Number 1 *Number 2*

  - The Quarky LED matrix display must show the color corresponding to the recognized cube from the moment of recognition and remain ON until the completion of Challenge 7 in both manual and autonomous modes, as illustrated below:



  - Access the learning resources to learn more about [Recognition Cards extension].



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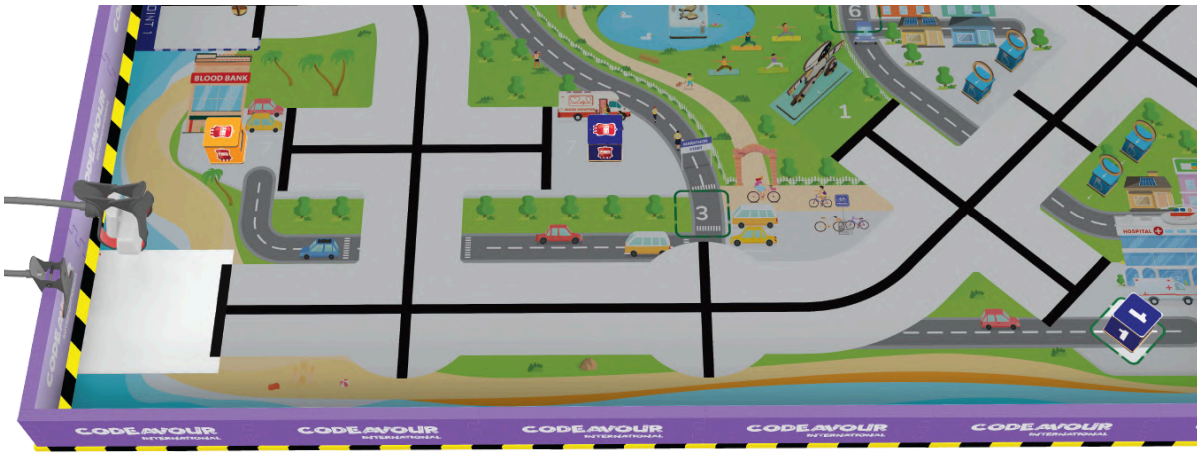
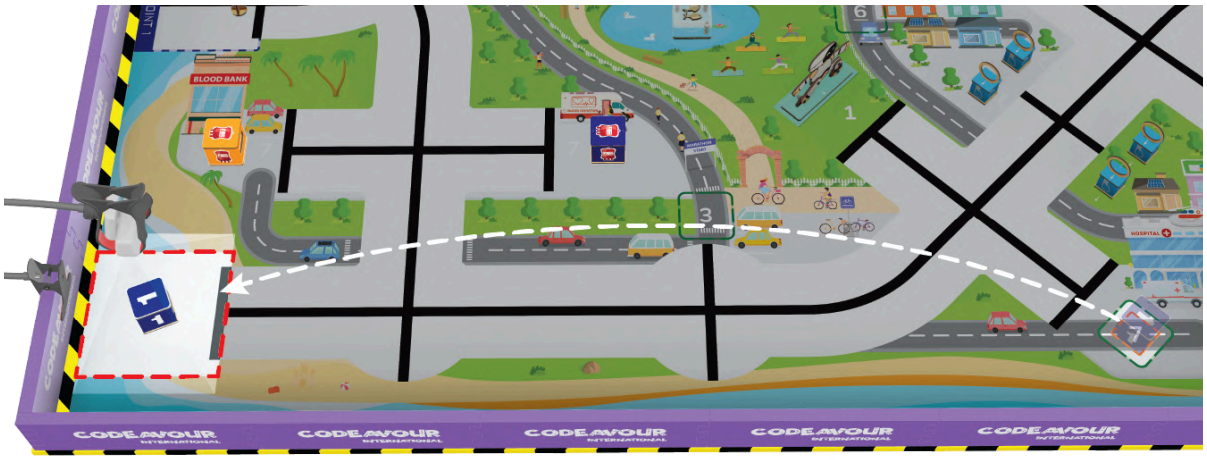
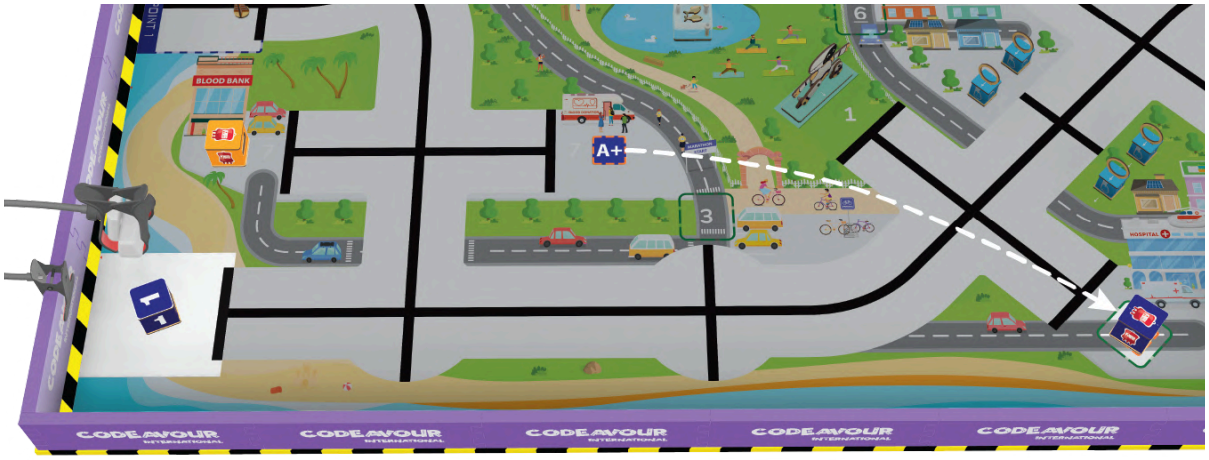
- **In case of 'Number 1' cube:**



Initial Position

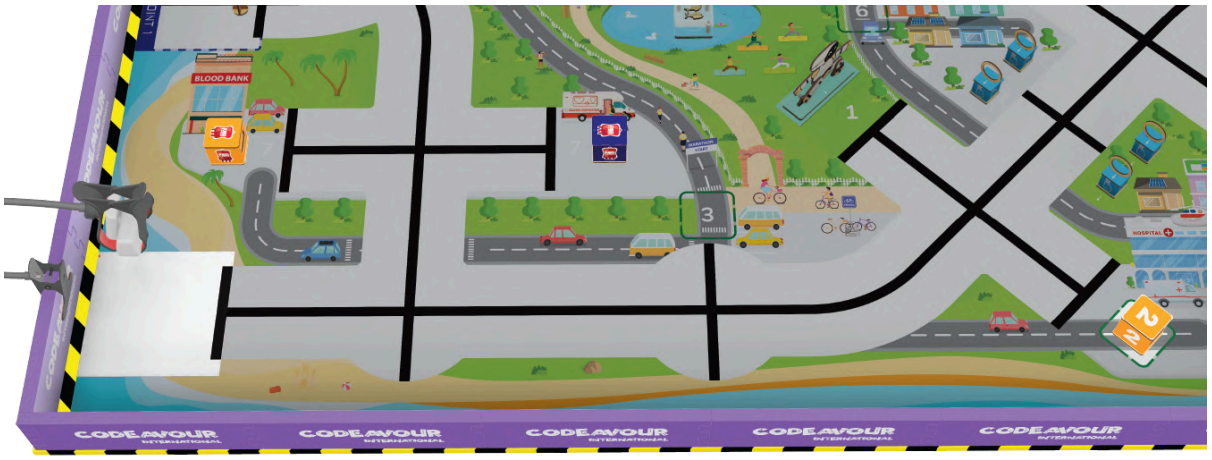


Recognising 'Number 1' cube at Scanning Point

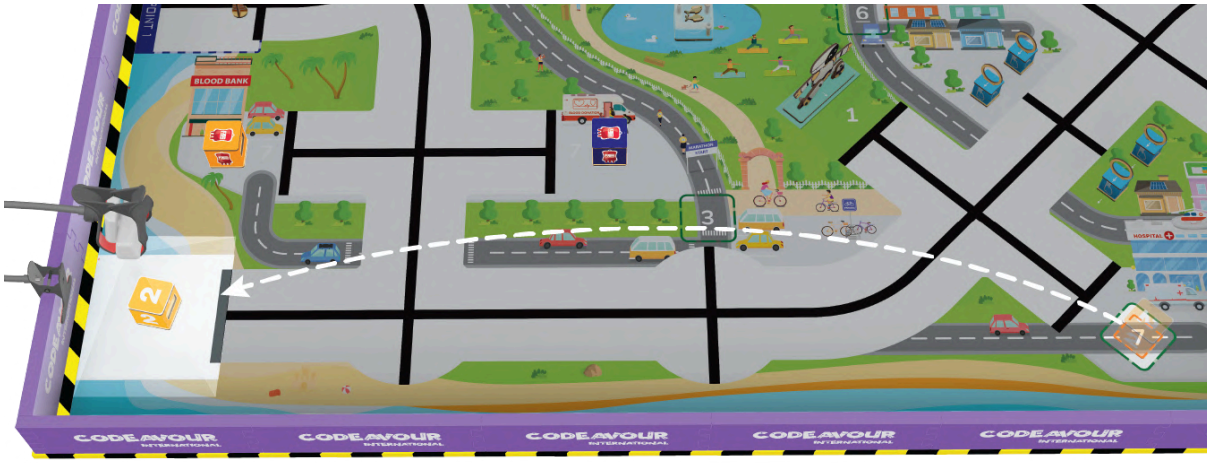


Delivering correct 'A Positive' Blood Bag

- **In case of 'Number 2' cube:**



Initial Position



Recognising 'Number 2' cube at Scanning Point

Delivering correct 'B Positive' Blood Bag

- **Junior/Senior**
  - Robots must use a self-trained model in the **ML Environment** (Image Classifier or Object Detection in PictoBlox) to identify the blood report, collect the corresponding blood from the blood bank, and deliver it to the hospital.

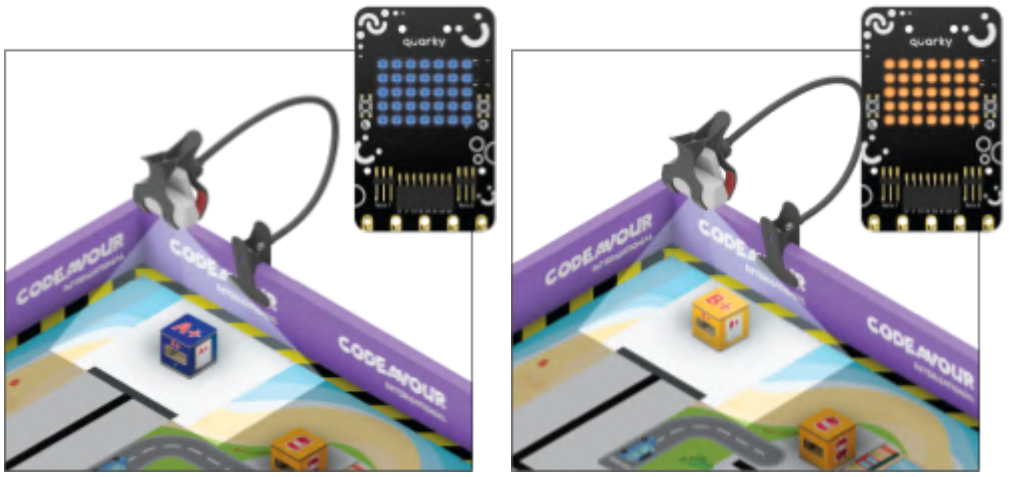
    t.ly/6TYWD

    Recognition cubes for Senior and Junior team:

Blood Report 'A Positive'

Blood Report 'B Positive'

  - The Quarky LED matrix display must show the color corresponding to the recognized cube from the moment of recognition and remain ON until the completion of Challenge 7 in both manual and autonomous modes, as illustrated below:



Note: *Teams can take images of the blood report cubes for the image classifier model training by either preparing their own cubes from the print-ready files in* ***Track 2 Resources*** *or getting their own* ***Codeavour Arena Objects kit****.*

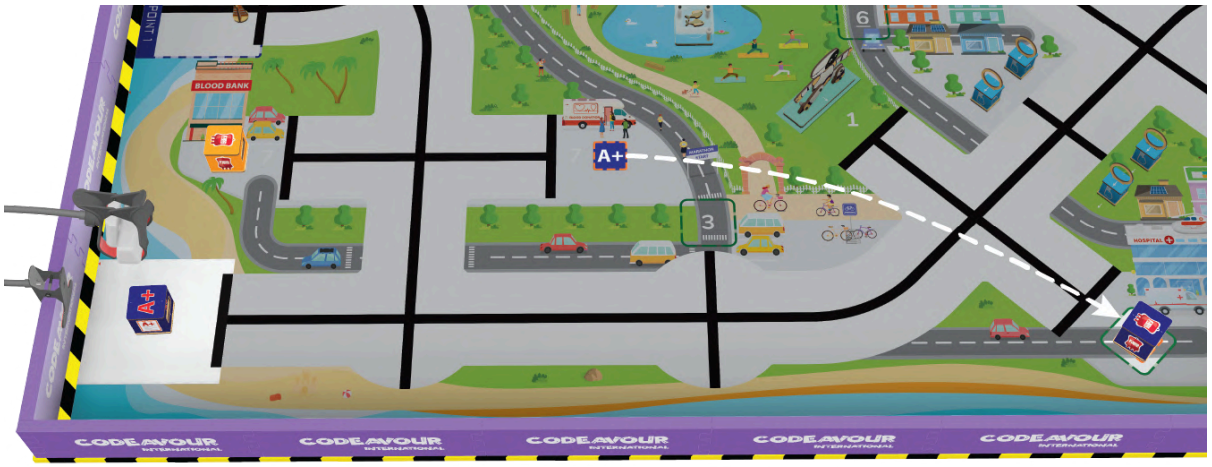
t.ly/C7T2AIci

t.ly/CodShop

- **In case of 'Blood Report A Positive' cube:**

Initial Position

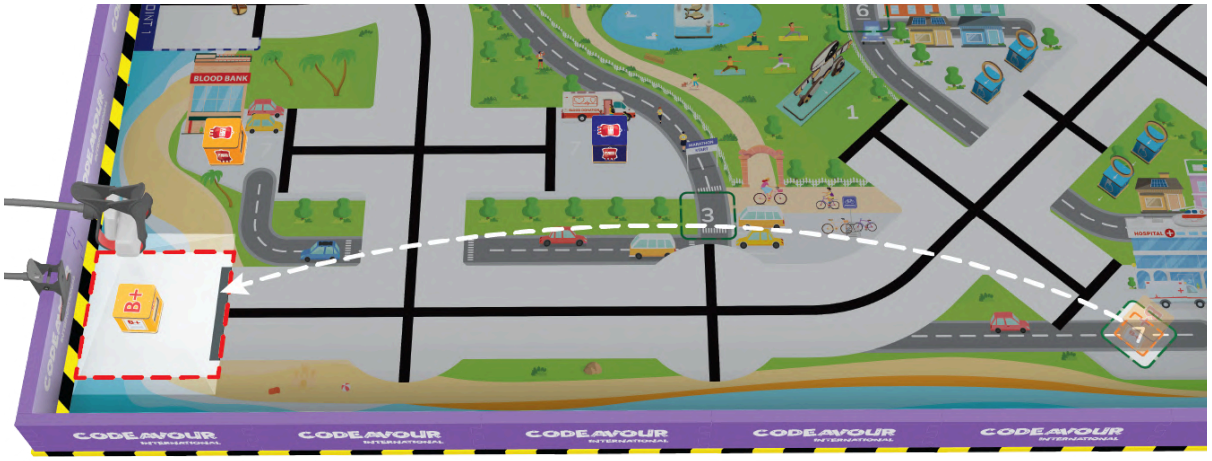
Recognising* 'Blood Report A Positive'** ***cube at Scanning Point



Delivering correct 'A Positive' Blood Bag

- **In case of 'Blood Report B Positive' cube:**

Initial Position



Recognising* 'Blood Report B Positive'** ***cube at Scanning Point

Delivering correct 'B Positive' Blood Bag

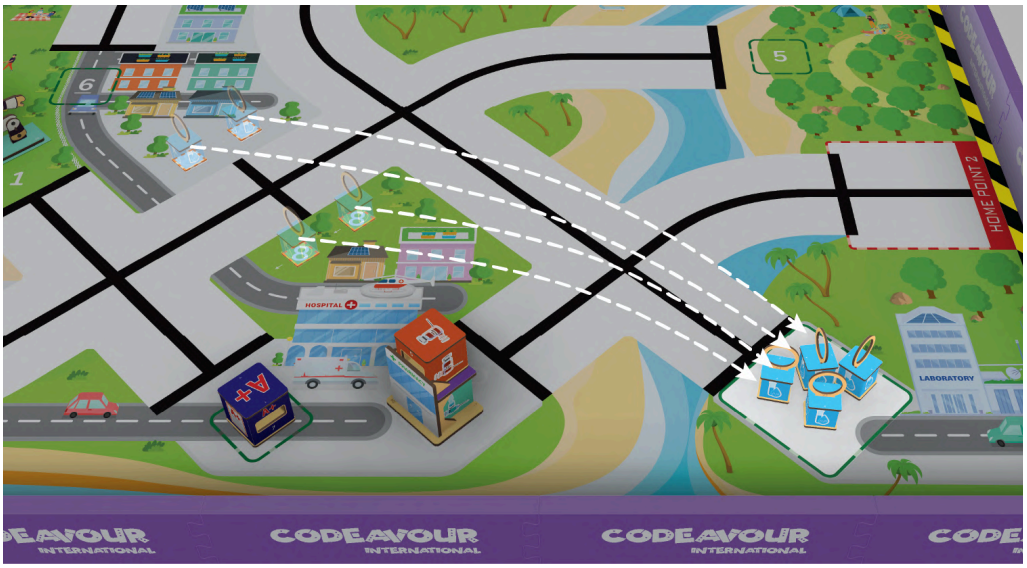
4.1.8. Challenge 8: Testing the Water

Clean and safe drinking water is essential for maintaining good health. Contaminated water can carry harmful bacteria, viruses, and chemicals that cause serious illnesses, especially in children and the elderly. On the island of Revoris, routine checks are vital to ensure that every household has access to water that is safe for daily use.

To protect the community, water samples from the residential area must be tested at the laboratory. This will help detect any contamination and allow quick action to prevent outbreaks.

Your task is to collect all four water samples from the residential area and deliver them to the water testing lab to check if the water is safe for use.

Challenge 8: Initial Position

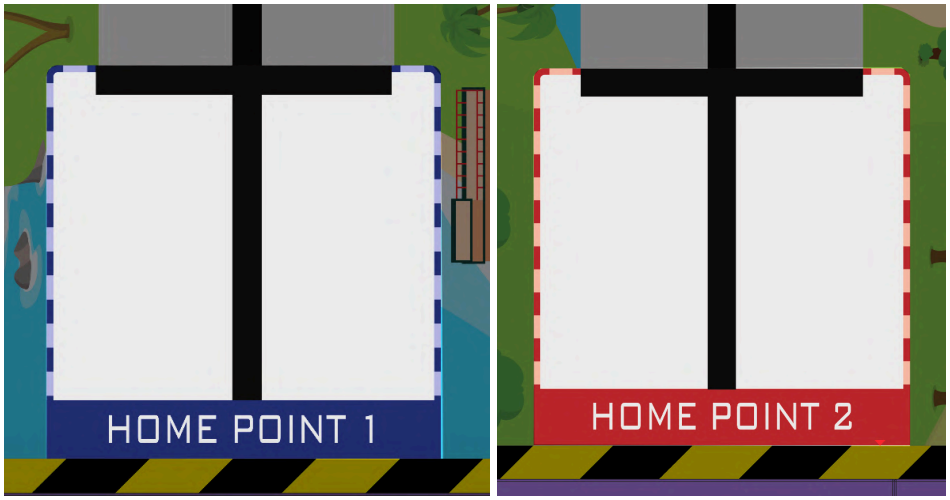


Challenge 8: Final Position

5. Gameplay

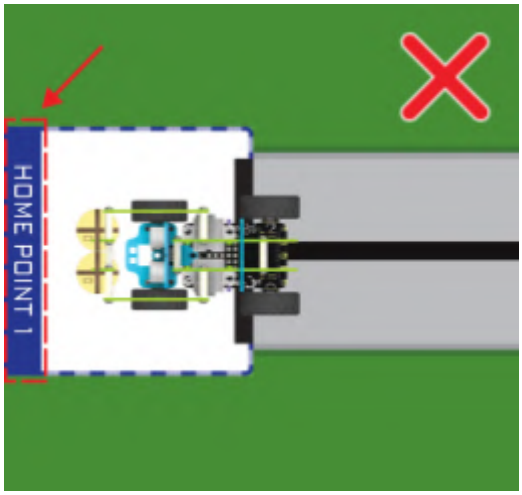
5.1. Home Point

There will be 2 Home Points in the arena, it is like a cooldown area.

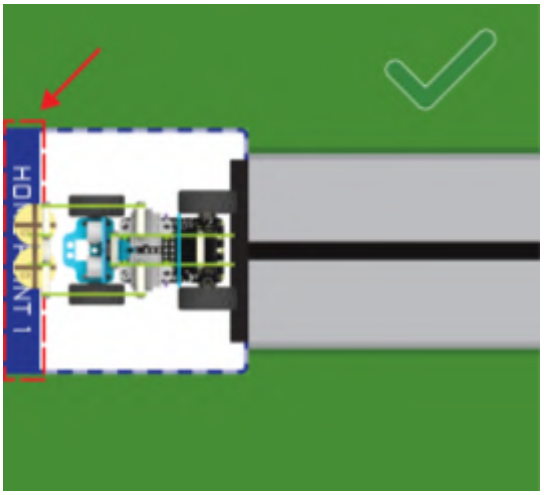


5.1.1. The team may start the game from either Home Point.

5.1.2. Teams are permitted to handle the robot and game objects only when the robot is within the highlighted area of a Home Point. Any object held by the robot is considered part of the robot for this purpose.



Robot is not over the Home Point Line



Robot over the Home Point Line

5.1.3. The team can touch and interact with connected devices when the robot is at any Home Point.

5.1.4. Teams may teleport the robot from one Home Point to another along with any game objects. During teleportation, they may manually correct, reposition, load, or unload objects as needed.

5.1.5. Any objects unloaded at a Home Point will remain out of the arena until reloaded, and they may be reloaded at either Home Point.

5.1.6. The match timer will continue to run while the robot is inside a Home Point or during teleportation once started.

5.2. Mode Switch Card (Switch Manual/Autonomous Mode):

The flexibility to switch the mode is crucial for adapting to various challenges during the competition. Autonomous mode begets more points, while manual mode allows teams to control their robot in real-time.

Mode Switch Card

5.2.1. The Mode Switch Card enables teams to change their robot's operational mode between **autonomous** and **manual control**.

5.2.2. The team can only exercise this card after completing a challenge and before starting the next one, and only when the robot is at a Home Point or at a line-following path junction.

5.2.3. It cannot be used while the robot is in contact with any game object(s) of any challenge.

5.2.4. Teams must raise their game card back to the Judge/Volunteer when exercising it.

5.2.5. The match timer will continue running while the Mode Switch Card is being exercised.

5.3. Rules for Age-wise Categories

To successfully complete the challenges, participants adhere to the rules specified for their age group:

5.3.1. Elementary (7-10 years):

i. Participants in the elementary age group can complete all challenges entirely using either a manual robot or an autonomous robot.

ii. The total time for the Elementary age group is **4 minutes** to complete the challenges.

iii. For AI Challenge 7, **quarky cubes** featuring pre-trained images of numbers from the 'Recognition Cards' extension in PictoBlox will be utilized for the elementary age group.

Number 1

Number 2

5.3.2. Junior (11-14 years)/Senior (15-18 years):

i. The Junior and Senior participants can use manual or autonomous modes but must perform **at least one challenge autonomously**.

ii. The total time for the Junior and Senior age groups is **3 minutes** to complete the challenges.

iii. For AI challenge 7, the team will be required to train images of the Blood Report cubes in the Machine Learning Environment of PictoBlox in order to complete the Challenge successfully.

Blood Report 'A Positive'

Blood Report 'B Positive'

***Note:** Completing a challenge with autonomous robots is rewarded with double points compared to manual robots for that challenge. This strategic choice boosts a team's score significantly, offering a competitive advantage.*

5.4. Before the Competition Round

5.4.1. The robot must be fully assembled in advance before the commencement of the competition round.

5.4.2. The Teams **must validate** their robot (made with Quarky) and PictoBlox code by the Codeavour robot verification team to ensure it meets the specified requirements physically at the venue. The Robot and the code must adhere to the specifications and inspection guidelines outlined in the rules.

5.4.3. The verification team can ask to disassemble the robot while inspecting it if required.

5.4.4. Teams will get their time slot and game field table before the competition round.

5.4.5. Before the competition round, the teams will be given **5 minutes** to test and set up their robots in the allotted practice arena.

5.4.6. Teams must ensure that their robot is connected to their device and that both the robot and device have fully **charged batteries** before the competition round. Any team that is not prepared at the time of their slot may lose their chance to compete.

5.4.7. Teams will receive some game cards from the Judge/Volunteer.

5.5. During the Competition Round

5.5.1. Only 2 minutes will be given to a team to set up and calibrate their robot on their dedicated arena table before starting the competition round.

5.5.2. Do's

I. Only team members are allowed near the competition (pit) area.

II. The team is responsible for picking up their robot immediately on time out.

III. Teams must raise their game card back to the Judge/Volunteer when exercising them.

IV. Teams have the flexibility to devise their own strategy and rearrange the order of challenges.

V. During a challenge attempted as an autonomous challenge:

VI. The team can build the code in parts for the robot to perform challenge(s) from one junction to ease the reset process.

5.5.3. Don'ts

I. Do not cause any damage to the competition field, arena, or any of the given equipment. Any such activity can result in instant disqualification.

II. Do not engage in any physical contact with another team's robot or its components. Physical interference with another team's equipment can lead to disqualification.

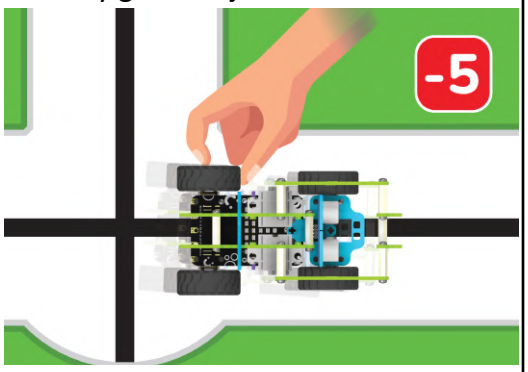
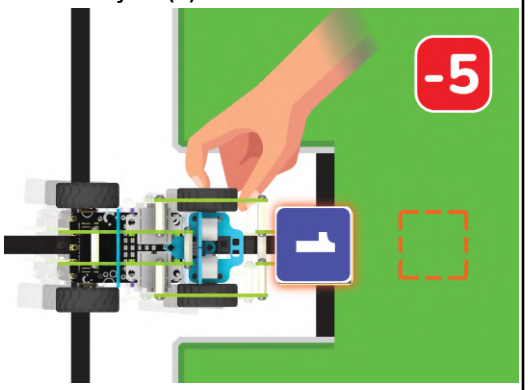
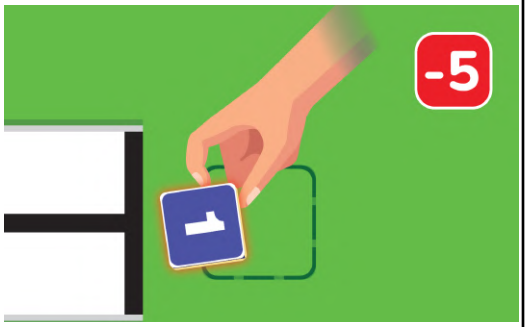
III. Do not modify the arena setup or interfere with any arena components (excluding Homepoints) once the match has started. Any changes to the field must be carried out solely by authorized judges or volunteers.

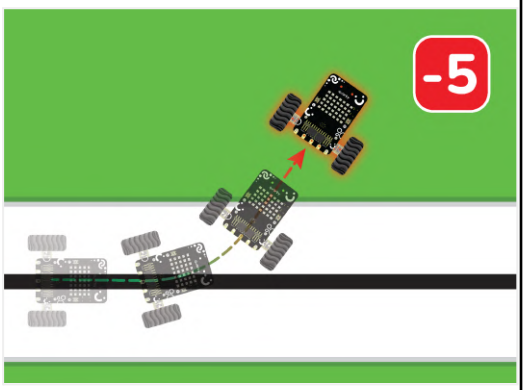
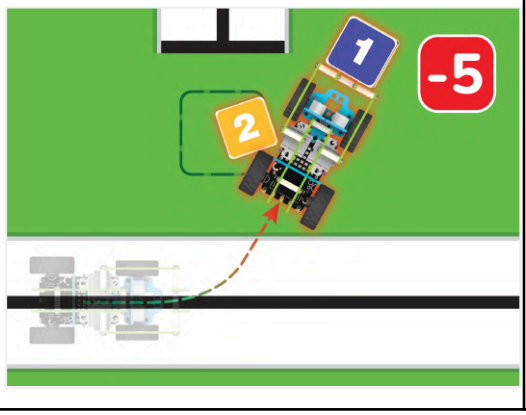
IV. Do not communicate, seek assistance, or engage with anyone outside the pit area (including mentors, coaches, teachers, parents, or guardians) during the match. Engaging with individuals outside the pit area can lead to disqualification.

5.6. Fouls

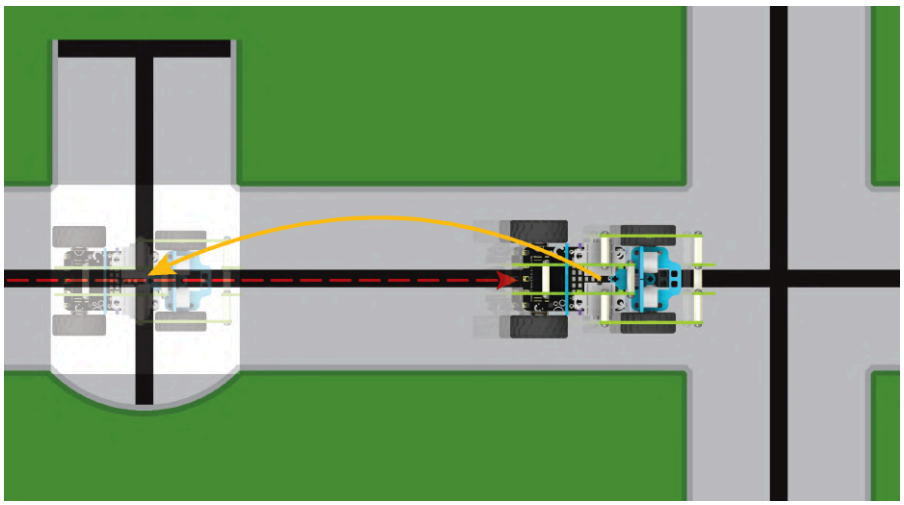
5.6.1. Five Points will be deducted for each foul from the total score.

5.6.2. The timer will not be paused during any foul or reset.

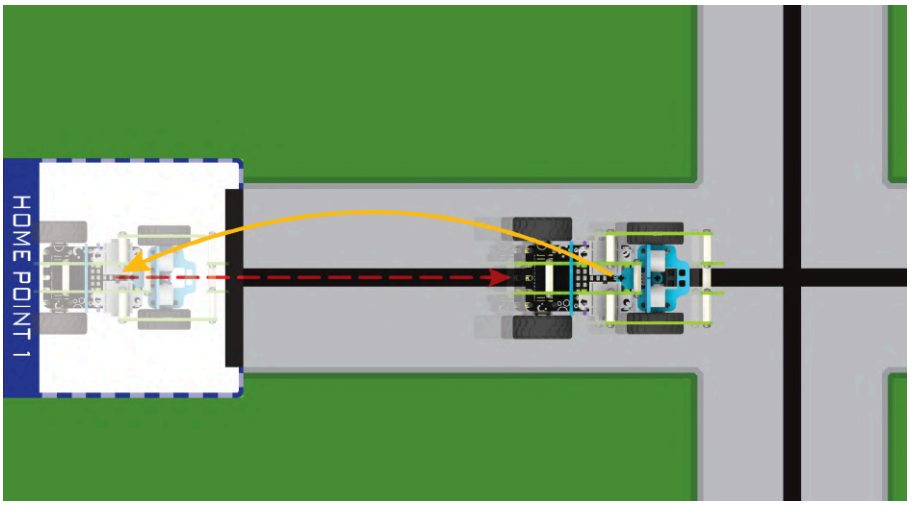
Foul Type	Definition	Penalty	Corrective Actions
Hand touch (Autonomous mode: To the connected device or the robot) (Manual mode: To the robot only)	When the robot is outside of any of the Home Point and it is not in contact with any game object. 	-5 points	1. The robot must be repositioned at the last junction (the intersection of two black lines) it successfully crossed. 2. Teams are allowed a one-time hand touch to the robot and its connected device in order to restart the autonomous program after repositioning.
	When the robot is in contact with any Game object(s) when touched. 	-5 points	1. The robot must be repositioned at the last junction (the intersection of two black lines) it successfully crossed. 2. Any game object(s) in contact with the robot during a hand touch will be reset to their original positions as per the arena setup, and any score previously gained from those object(s) will also be reset. 3. Teams are allowed a one-time hand touch to its connected device in order to restart the autonomous program after repositioning in autonomous mode.
	At deliberate touch to any game object(s) when the robot is not in contact with game objects (except Home points). 	-5 points	1. The activity score related to those object(s) will not be counted. 2. Cube(s) will be removed from the arena.

Path Deviation	At any instance if a robot deviates the line following path and it is not in contact with any game object. 	-5 points	1. The robot must be repositioned at the last junction (the intersection of two black lines) it successfully crossed. 2. Teams are allowed a one-time hand touch to the robot and its connected device in order to restart the autonomous program after repositioning.
	When a robot is in contact with any game object(s) at path deviation. 	-5 points	1. The robot must be repositioned at the last junction (the intersection of two black lines) it successfully crossed. 2. Game object(s) affected by, or in contact with, the robot due to path deviation will be reset to their original positions as per the arena setup, and any score gained from those object(s) will also be reset. 3. Teams are allowed a one-time hand touch to the robot and its connected device in order to restart the autonomous program after repositioning.

5.6.3. If a foul occurs before the robot reaches its first junction after starting from the home point, it must be repositioned at the same home point it started from, rather than at the last junction (the intersection of two black lines).

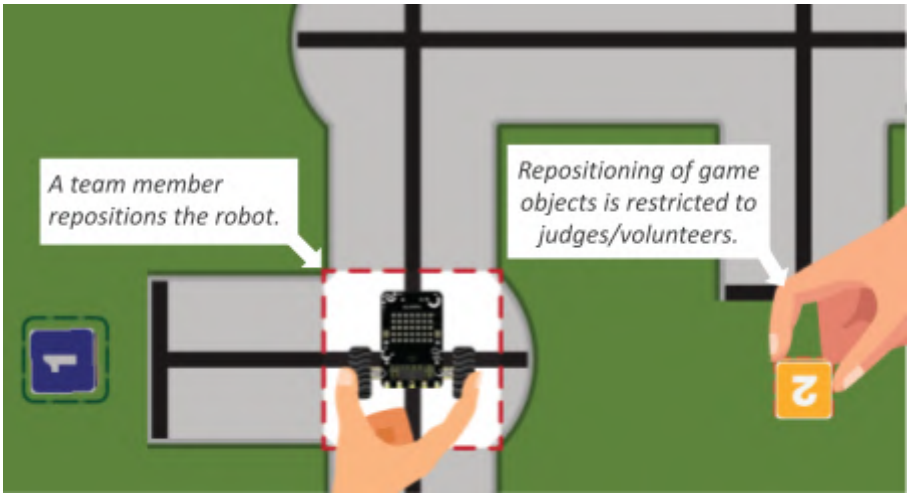


Repositioning robot at Last Crossed Junction



Repositioning the robot at the last Homepoint it crossed

5.6.4. During a foul, the repositioning of game objects will be carried out only by the Judge or an assigned volunteer (the team must prompt the judge to reposition objects). If the robot is holding a cube, the team must hand it over to them, in accordance with the conditions specified above in the foul table.



Repositioning Robot and Object

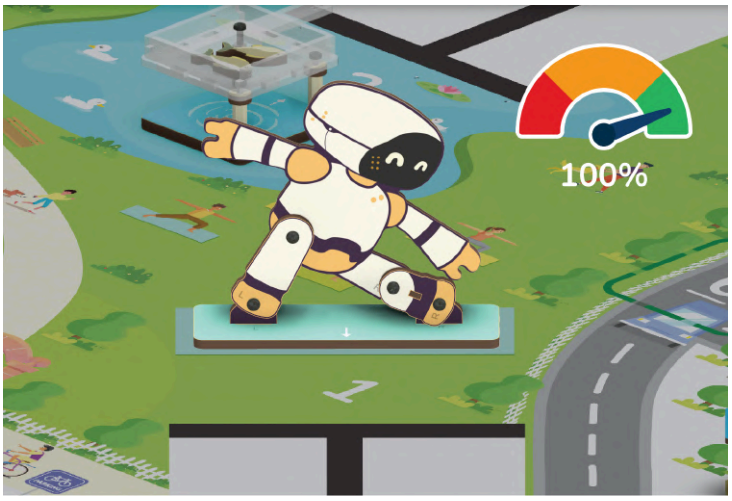
5.6.5. If a team **violates the foul's Corrective Actions** and continues the game, any points from challenges attempted after the violation will not be counted, and the judge may end the match.

6. Evaluation and Scoring

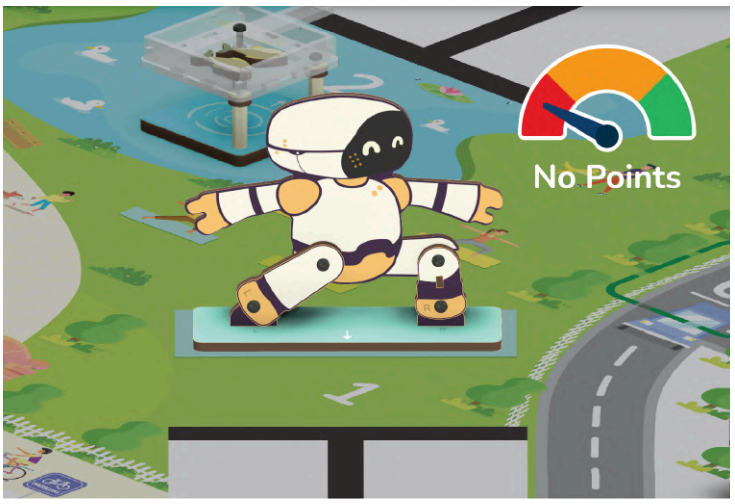
During the competition (physical mode), the score will be given as per the following criteria:

6.1. Scoring for challenge 1:

6.1.1. **Full score**: If the Roliver's yoga posture from Virabhadrasana (Warrior Pose) to Trikonasana (Triangle Pose) is successfully changed.



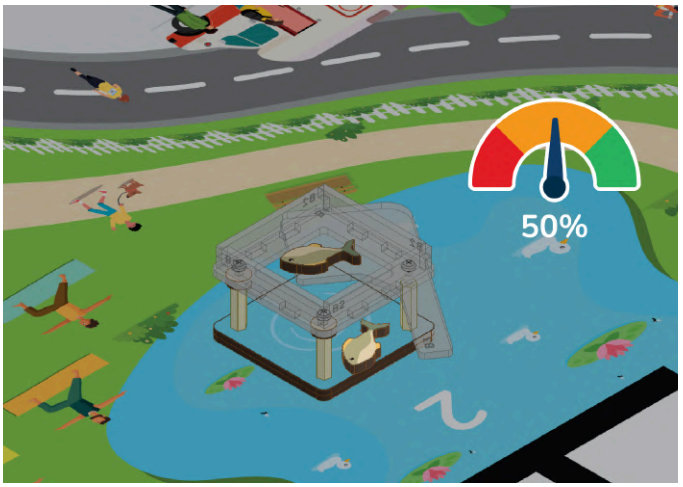
6.1.2. **No score:** If Posture is not successfully changed.



6.2. Scoring for challenge 2:

6.2.1. **Full Score:** If both the fish are dropped from the fish tank.

6.2.2. **Half Score:** If any one out of two fish is successfully dropped from the fish tank.



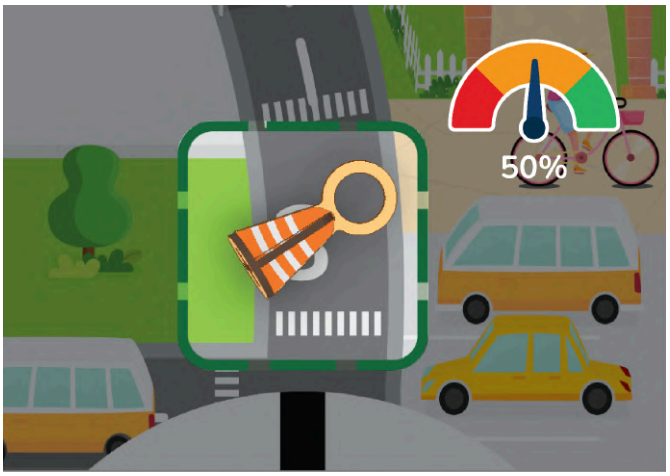
6.2.3. **No Score:** If both the fish are in the fish tank at the end of the game.

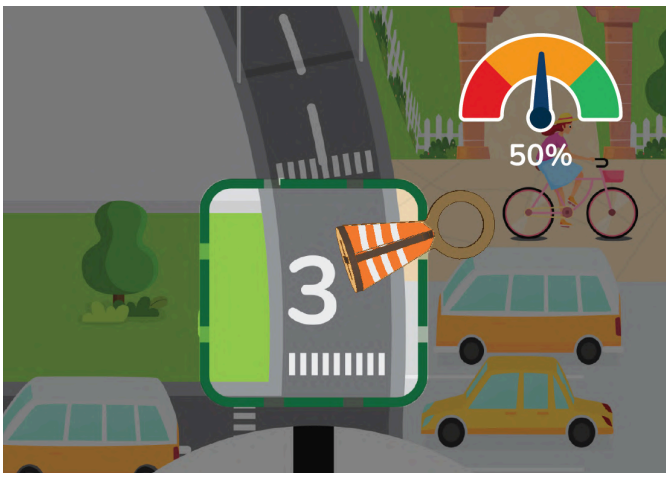
6.3. Scoring for challenge 3:

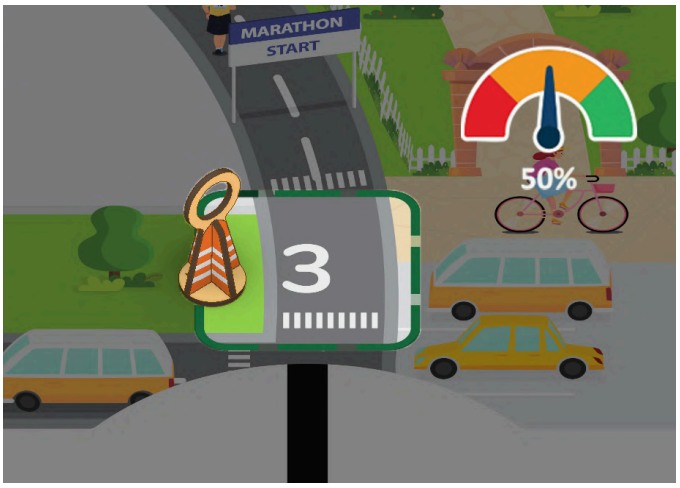
Note: Both the Traffic Cone will be scored individually in a challenge.

6.3.1. **Full Score:** If a Traffic Cone is placed inside or positioned on the green line.

6.3.2. **Half Score:** If a traffic cone is placed partially outside the drop point (green box), it will receive half of the score. The entire traffic cone, including the hook, is considered for scoring.







6.3.3. **No Score:** If a Traffic Cones is completely outside the drop point.

6.3.4. **Bonus point:** If both the Traffic Cones are placed completely inside the drop point and standing upright.

6.4. Scoring for challenge 4 and 8:

Note:

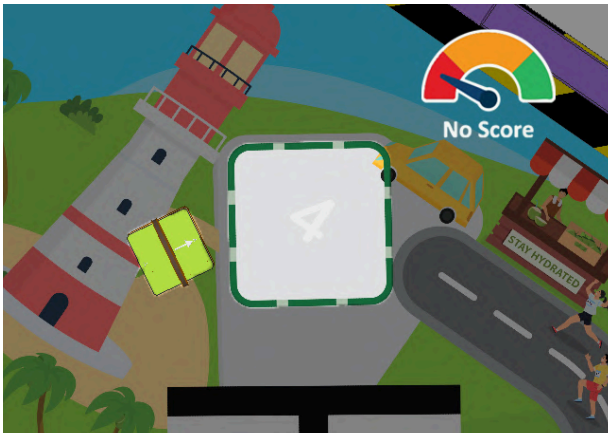
(1) Each Small Cubes will be scored individually in a challenge.

(2) Only the cube body is considered for scoring, the ring of the small cube is exceptional.

6.4.1. **Full Score:** If a Small Cube is placed inside or positioned on the green line.

6.4.2. **Half Score:** If a Small Cube is placed partially outside the drop point (green box) will only score half.

6.4.3. **No Score:** If a Small Cube is completely outside the drop point.

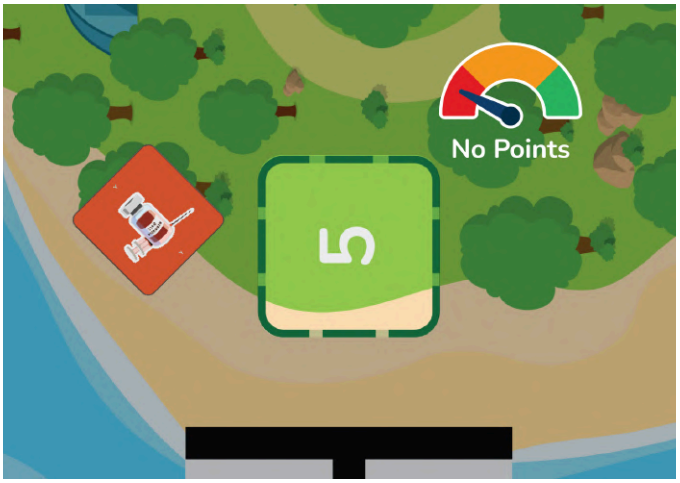


6.5. Scoring for challenge 5,6 and 7:

6.5.1. Full Score: If a Cube is placed inside or positioned on the green line.

6.5.2. Half Score: If a Cube is placed partially outside the drop point (green box) will only score half.

6.5.3. No Score: If a Cube is completely outside the drop point.



- Teams should abide by the participation and submission guidelines; non-adherence to them will result in disqualification.

- The team must submit photos, videos, and detailed information about the robot on the Codeavour 7.0 submission portal.
- Participants are required to complete as many challenges as possible within the time limit. Unfinished tasks will not be awarded points once the time expires.
- If any game object(s) come into contact with the robot during manual mode, the respective activity will be scored according to the manual mode criteria, even if the robot had performed the activity entirely or partially in autonomous mode.
- The timer will not be paused once the game starts.
- Download the **Score sheet** to review individual activity scores and use it for practice.

7. Glossary

Glossary	
AI (Artificial Intelligence)	The simulation of human intelligence processes machines, especially computer systems, to perform tasks that typically require human intelligence, such as visual perception, speech recognition, decision-making, and language translation.
Autonomous Robot	A robot which can operate without human intervention, following a predetermined set of instructions or responding to its environment using sensors and algorithms.
Calibration	The process of adjusting and fine-tuning the robot's sensors and movements to ensure accuracy during challenges.
Challenge	A specific task or problem that participants need to solve using their robots within a limited time frame.
Codeavour	The name of the international robotics competition is mentioned in the rule book.
Corrective Actions	The actions taken by the judge and the team after a foul.
DIY (Do-It-Yourself)	The practice of building, modifying, or repairing something without the direct aid of experts or professionals.
Drop Point	Area where the robot is expected to move a Game Object as defined in the challenge. This is marked with a green outline.
Decision Coin	A physical item used to select one cube for Challenge 7.
FHD (Full High Definition)	A display resolution of 1920 x 1080 pixels, providing high-quality visual content.
FOV (Field of View)	A camera or other optical device can see the extent of the observable world at any given moment.
Game Arena	The designated competition area where robots perform tasks and challenges.
Game Field	The area within the competition arena where the robots perform the challenges and tasks.
Game Objects	Physical items are placed inside the arena that robots interact with during the challenges.
Grab	A method of robot manipulation where the robot uses a gripping mechanism to hold and move objects.
Home Point	One of two cooldown areas in the arena, where the team may start the game and safely interact with the robot and game objects under specific rules.
Home Point Teleportation	An action where the robot and arena object move from one home point to another.
Machine Learning Environment	The PictoBlox platform where machine learning models can be trained and exported further to Block or Python Coding Environments.
Mode Switch Card	A card that allows teams to switch their robot from manual to autonomous mode or vice versa during the round.
Manual Robot	A robot that is controlled in real-time by a human using input interfaces.

Machine Learning	The ability to automatically learn and improve from experience without being explicitly programmed, often used in pattern recognition and decision-making.
Push Pull	A method of robot manipulation where the robot applies force to objects to push or pull them to desired locations.
Pick up Point	Area from where the Game Object is defined to be positioned before the respective challenge is attempted. This is marked with an orange outline.
Pick and Place	A method of robot manipulation where the robot picks up an object from one location and places it in another.
PictoBlox	The specified programming software used for programming the robots in the competition.
Practice Arena	An allocated space where teams can test and set up their robots before the competition round.
Quarky Expansion Board	An additional board can be attached to the Quarky microcontroller to extend its capabilities.
Quarky	The specified hardware/microcontroller used for building robots in the competition.
Robot Verification Team	The team checks that robots meet the specified requirements and guidelines before the competition.
Referee	An official is responsible for overseeing and judging the competition, ensuring fair play and adherence to the rules.
Robotics	The interdisciplinary field integrates mechanical engineering, electronics, computer science, and artificial intelligence to design, build, and operate robots.
Scoring Sheet	A record of each team's scores and performance during the competition.
Sensors	Devices that detect and respond to inputs from the physical environment, such as light, heat, motion, or pressure.
Table Number	A unique identifier is assigned to each competition table or area where teams perform their challenges.
Teleportation Strategy	A strategic move where the robot is instantly moved between predefined starting or reset points on the competition field.
Track	The specific category or type of competition within the overall robotics event (e.g. Track-2: Climate Action Challenge, Track-3: Robo Soccer League).
Violation	To act against (a rule, law, principle, promise, agreement, instruction, etc.); break, transgress, or fail to honor.
Wired Connection	A physical connection using wires or cables to transfer data or power between devices.
Wireless Connection	A connection that allows data or power transfer between devices without the need for physical wires or cables.

Important: *Please note that minor updates to this competition's rules and guidelines may be made before/during the competition to ensure accuracy and fairness. Before the competition, you will receive your time slot and table number.*

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CODEAVOUR 7.0
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