

Track 2: AI Robo City Challenge Arena Setup Guide

Table of Contents - Track 2 - AI Robo City Challenge Arena Setup Guide

1. Arena Set-up:	2
1.1 Arena set-up on the table	2
1.2 Arena set-up on the floor	3
1.3 Wall Assembly	4
1.4 Pit area marking	6
2. Arena Objects Assembly:	7
2.1 Cube Assembly Guide	7
2.2 Rescue Crane Assembly	11
2.3 Tree Assembly	16
3. Camera Setup	20
4. Bot Dimension Verification Box	21

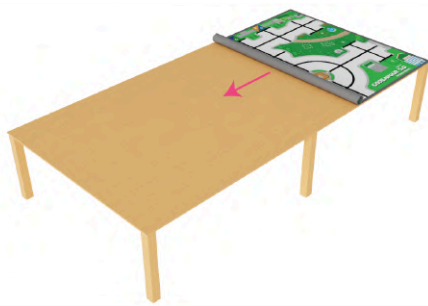


1. Arena Set-up:

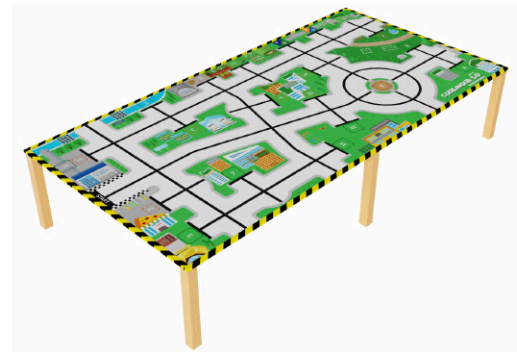
1.1 Arena set-up on the table

1. Unroll the Printed Arena on the 8x4 feet Table and align it perfectly in the center.

Note: Make sure to clean the top surface of the table before placing the arena.

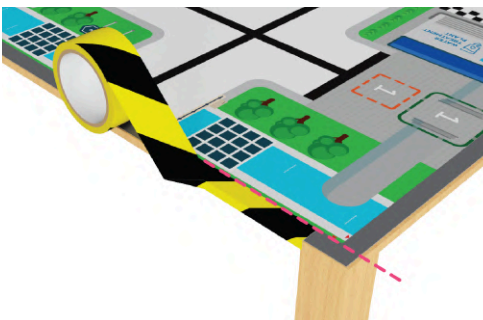


Complete:



2. Fix the arena on the table with a Black and Yellow Tape.

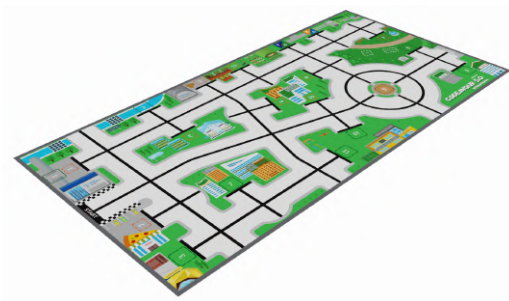
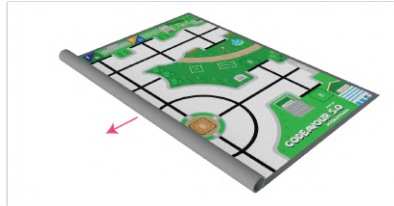
Note: The tape shouldn't cover the area inside the gray edge of the arena.



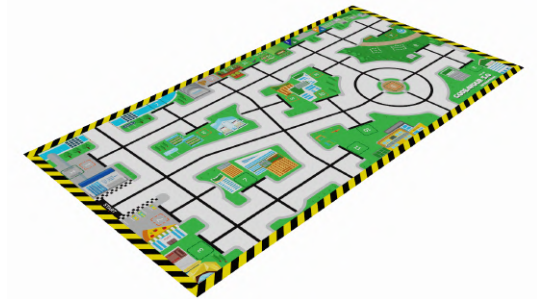
1.2 Arena set-up on the floor

1. Unroll the Printed Arena flat on the floor.

Note: Make sure to clean the surface before placing the arena on the floor. Avoid grooves and uneven surfaces on the floor.



Compete:



2. Fix the arena on the floor by covering the gray edges of the arena under the tape with a Note: The tape should be aligned to the inner edge of the gray border of the arena and shouldn't go inside.



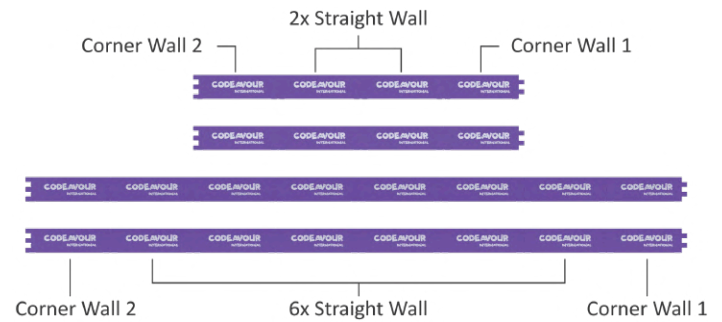
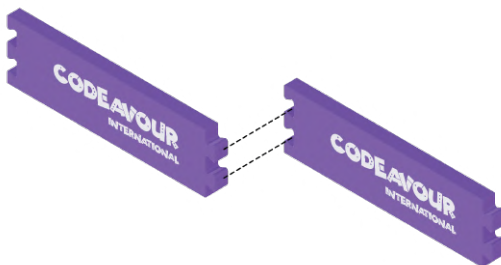
1.3 Wall Assembly

Note: For both on-table and on-floor arena assembly, wall assembly is common.

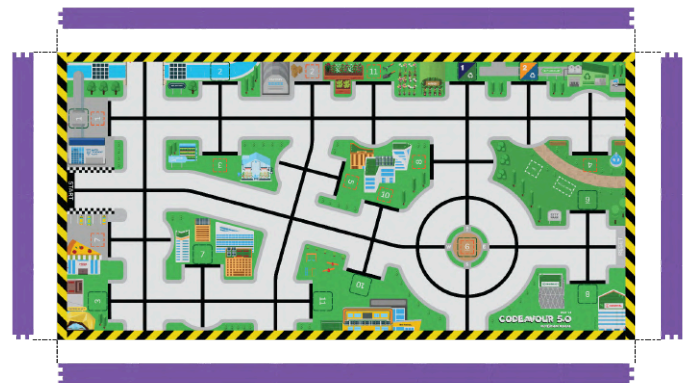
1. Cut and paste pieces of double-sided tape (about 2 cm in length) to the bottom of each wall piece.



2. Assemble two sets of Straight walls of x2 and x6 pieces along with Corner Wall 1 and Corner Wall 2.



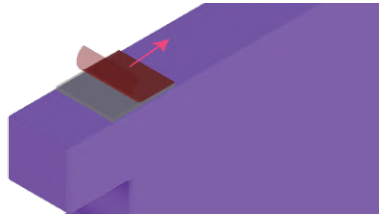
3. Mark the positions of each wall assembly by placing and aligning all the wall assemblies on the arena.



Note: Straight Walls joints should align the triangle marks on the arena as shown below.

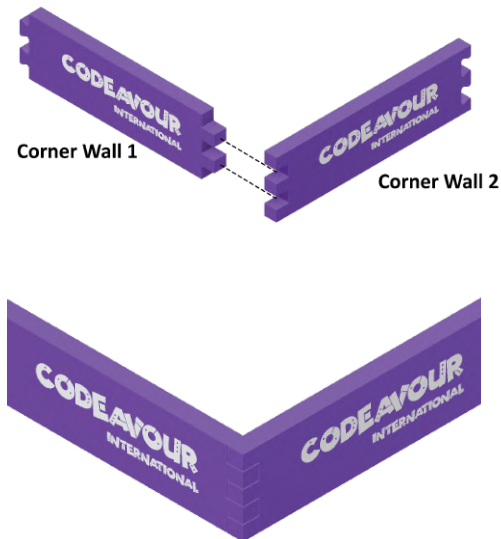


4. Peel the top of all the Double-sided tapes pasted on the walls.

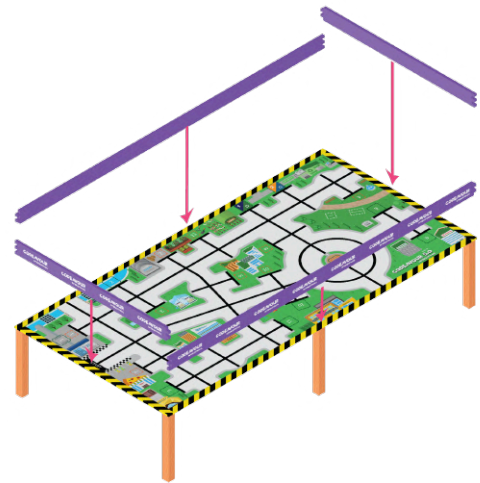


5. Fix the sets of walls with Corner walls on the Arena with care, confirming their marked placement on the Arena and also mending corner walls joints.

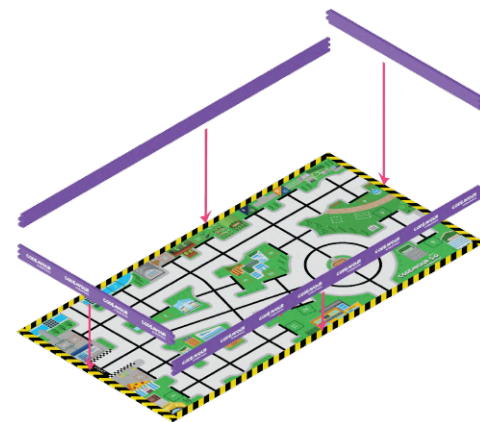
Example of Corner wall fixture:



Wall assembly on-table arena:

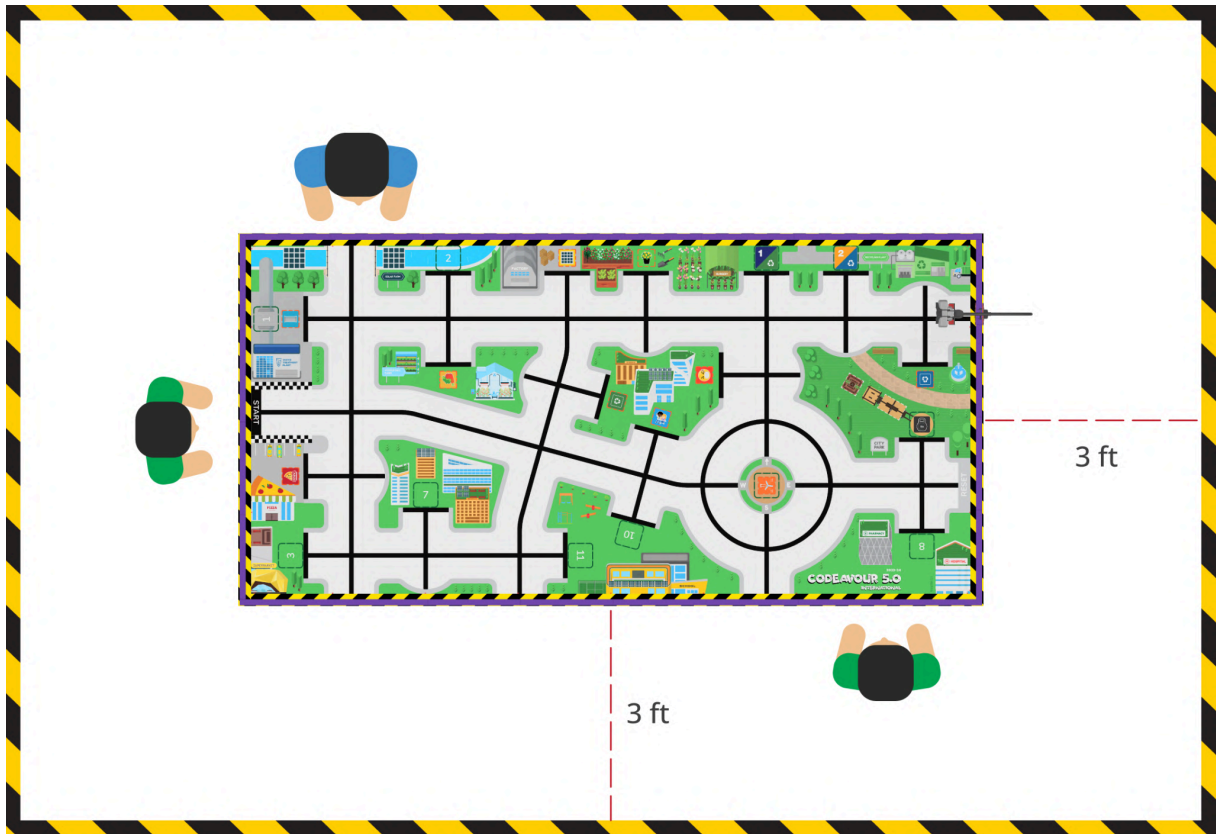


Wall assembly on-floor arena:



1.4 Pit area marking

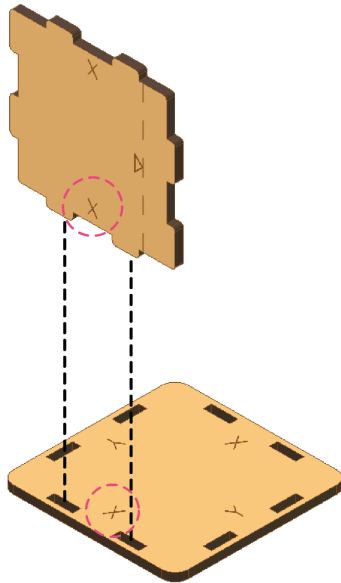
1. Apply **Black and Yellow tape** around the arena leaving exactly **3 feet** from each side.



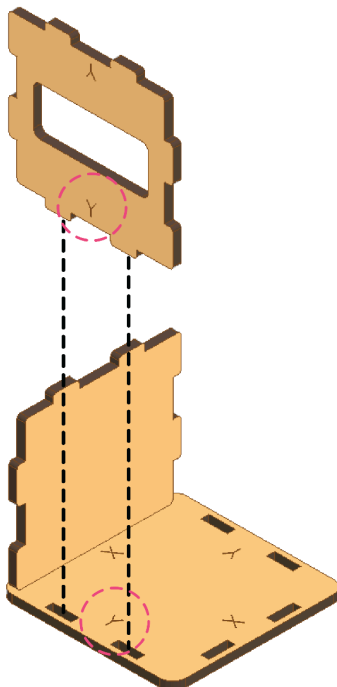
2. Arena Objects Assembly:

2.1 Cube Assembly Guide

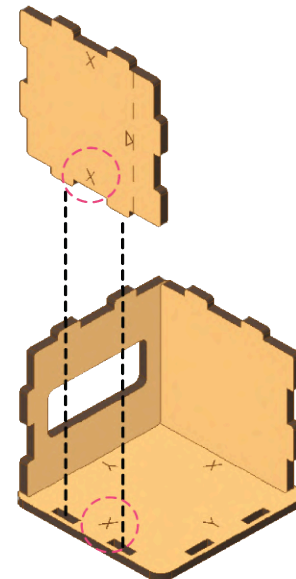
1. Attach **Cube P3** to **Cube P1** by matching the letter 'X' on both parts.



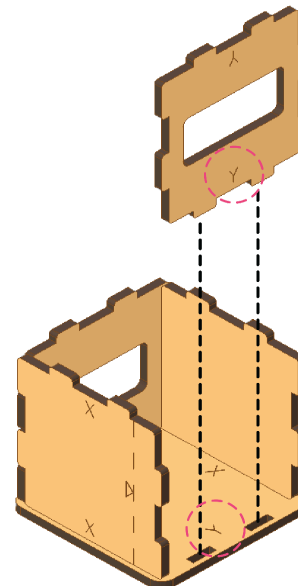
2. Attach **Cube P2** to **Cube P1** by matching letter 'Y' on both parts.



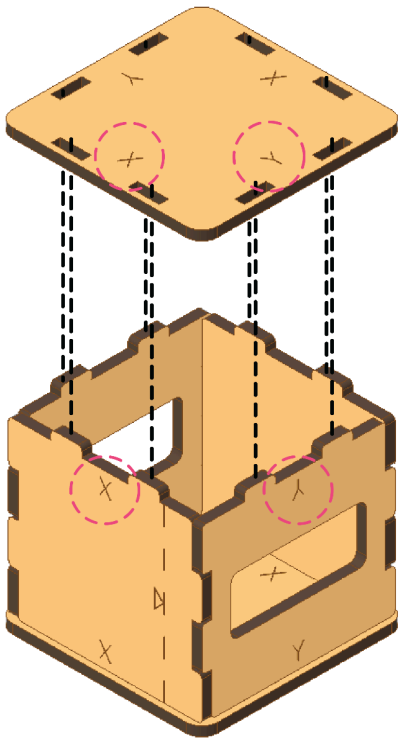
3. In the same way, attach another **Cube P2** and **Cube P3** to **Cube P1**.
(a)



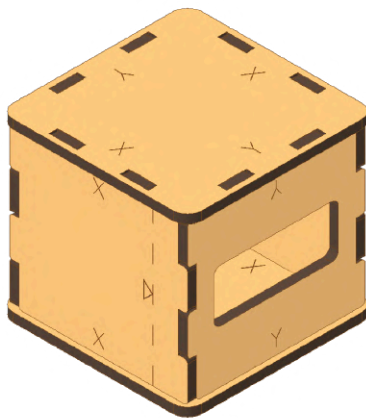
(b)



4. Attach another **Cube P1** by matching the letters 'X' and 'Y' on the part faces.

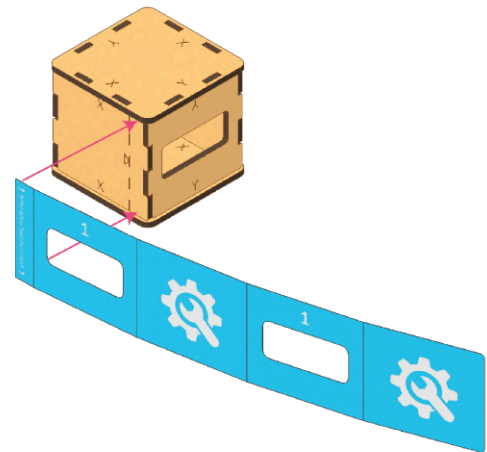


Assembled View:

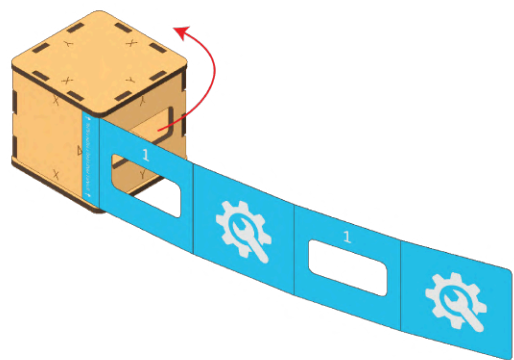


5. Start pasting the **Side Sticker** on the cube from the guides given on the face of **Cube P3** and Sticker.

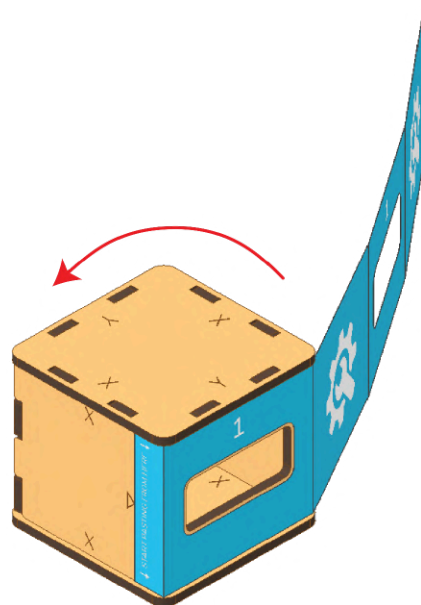
(a)



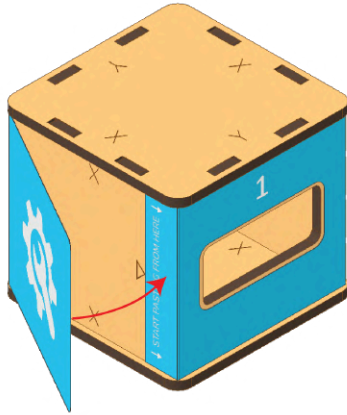
(b)



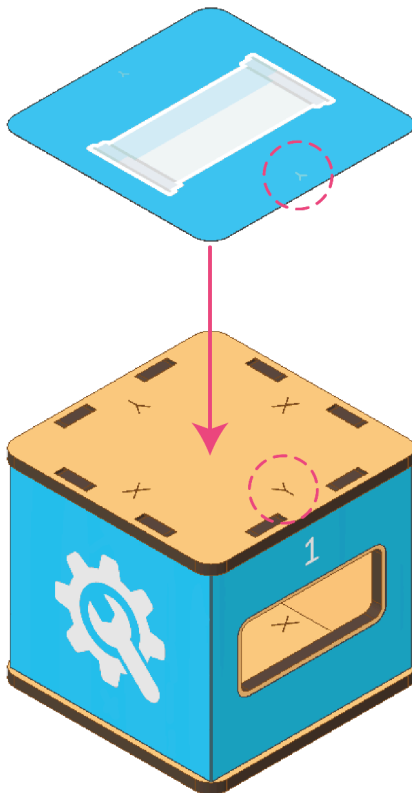
(c)



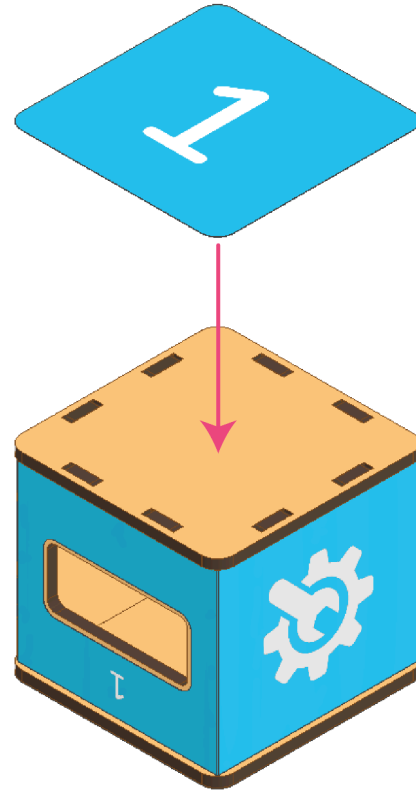
(d)



6. Apply the **Top Sticker** on the top side of the cube by matching the letter 'Y' on the Top Sticker and the cube.



7. Apply the **Bottom Sticker** on the bottom side of the cube.

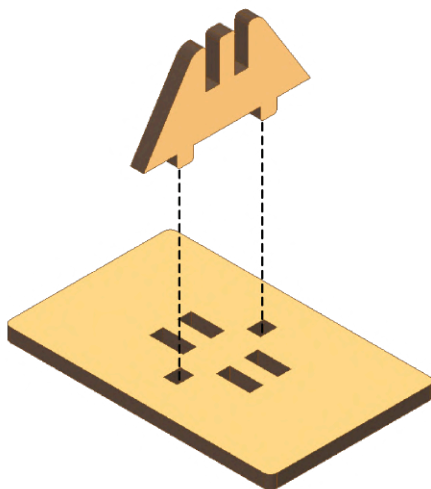


8. In the same way, assemble all 13 types of activity cubes.



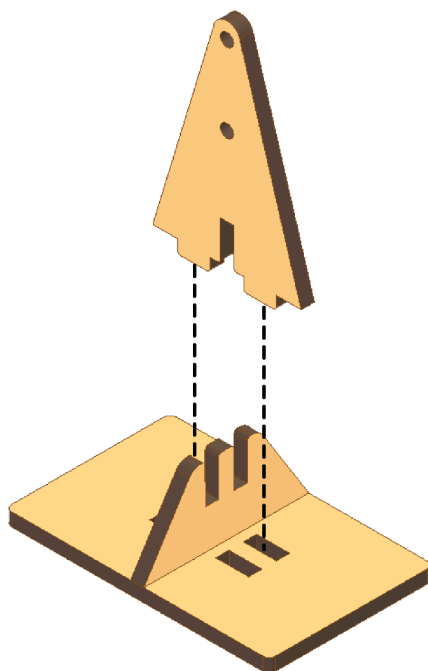
2.2 Rescue Crane Assembly

1. Attach the **Foundation** on top of the **Base**.

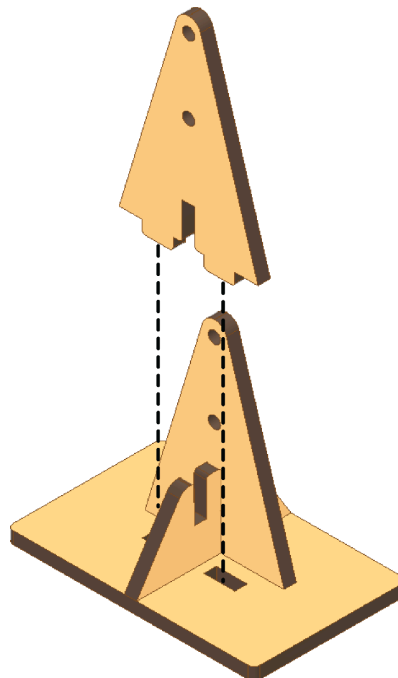


2. Attach both the **Towers** one by one on the **Foundation** and **Base**.

(a)

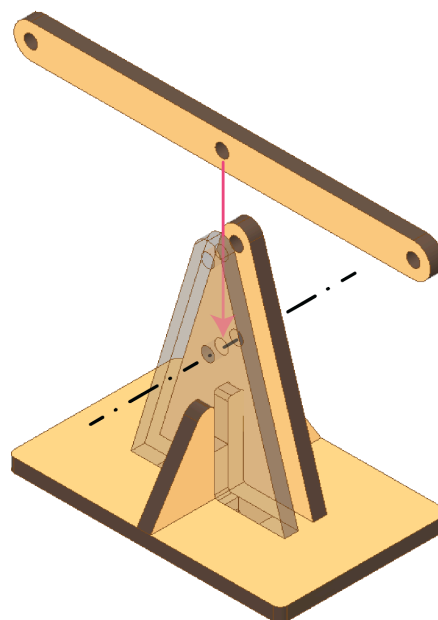


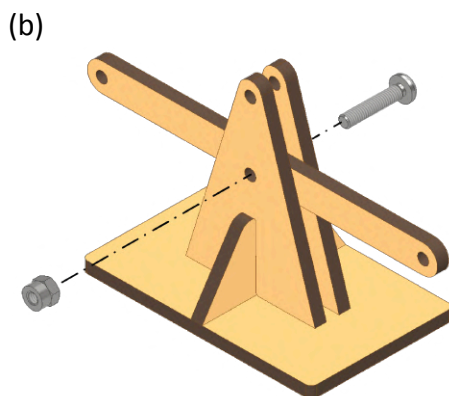
(b)



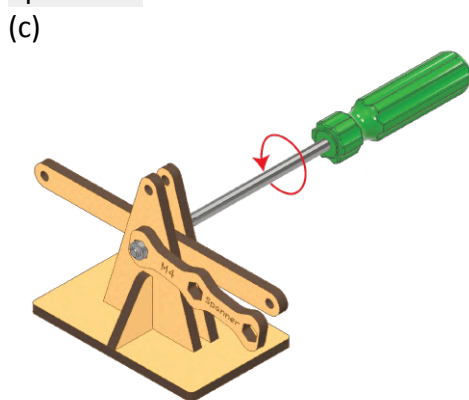
3. Fix **Jib** in the lower hole between the **Towers** using **M4 Bolt (20mm)** and **M4 Lock Nut** with M4 Spanner.

(a)

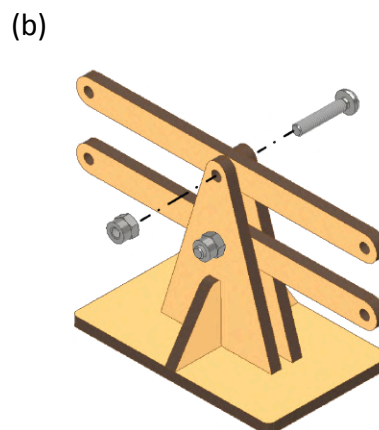
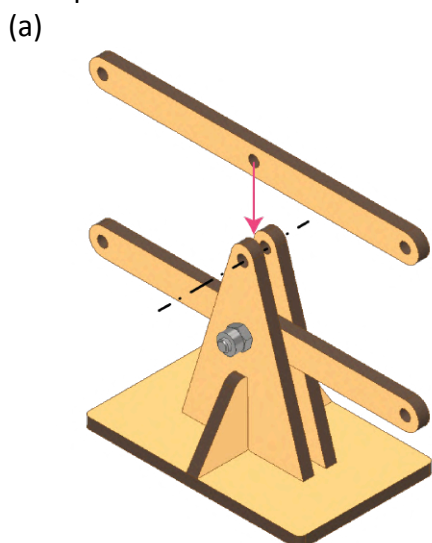




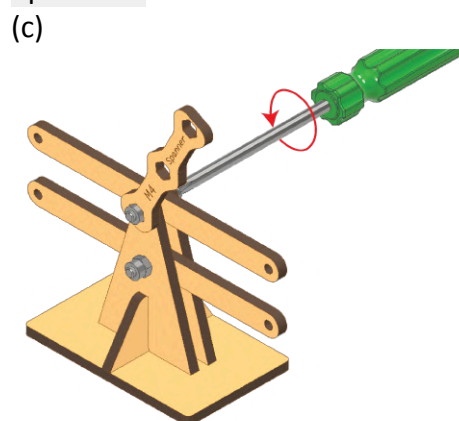
Note: Keep the M4 Lock Nut slightly loose to ensure good mechanism operation.



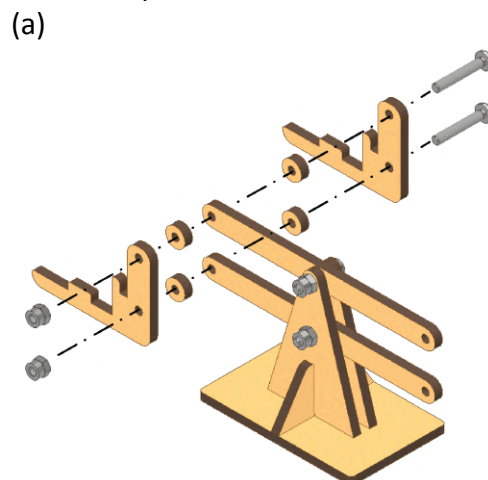
4. Now fix another **Jib** in the upper hole between the **Towers** using **M4 Bolt (20mm)** and **M4 Lock Nut** with M4 Spanner.

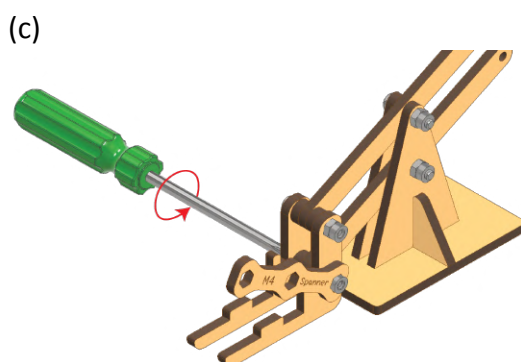
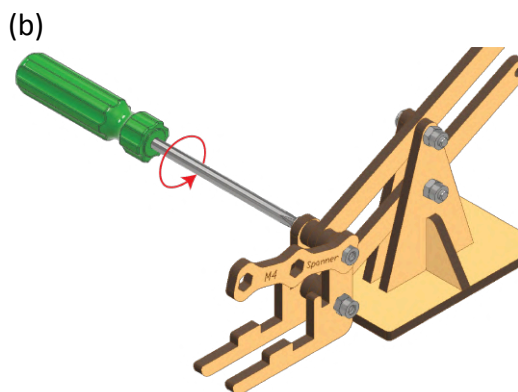


Note: Keep the M4 Lock Nut slightly loose to ensure good mechanism operation.



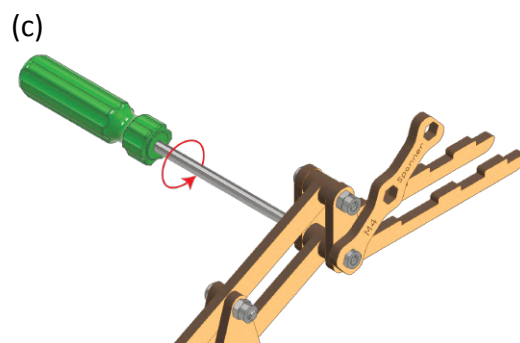
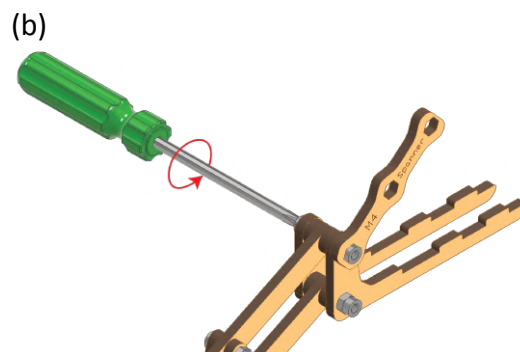
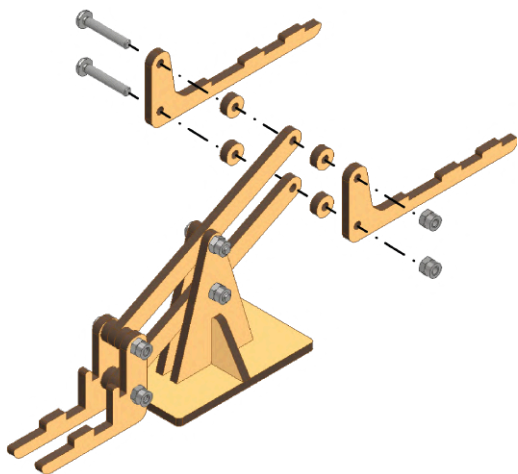
5. Attach both the **Platform Base 2** on **Jibs** and **Spacers** in between using **M4 Bolts (25mm)** and **M4 Lock Nuts** with M4 Spanner.





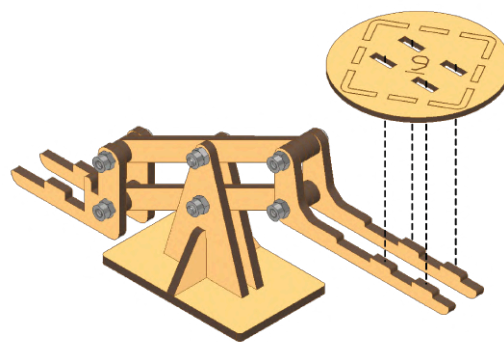
Note: Keep the M4 Lock Nuts slightly loose to ensure good mechanism operation.

6. Attach both **Platform Base 1** on the other side of **Jibs** and **Spacers** in between using **M4 Bolts (25mm)** and **M4 Lock Nuts** with M4 Spanner.

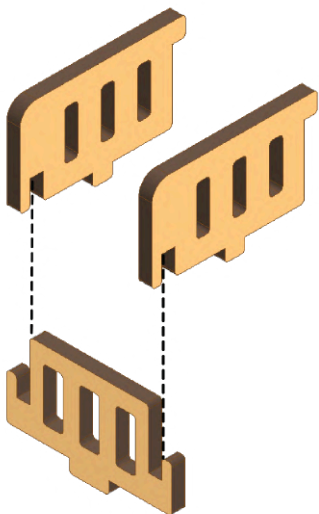


Note: Keep the M4 Lock Nuts slightly loose to ensure good mechanism operation.

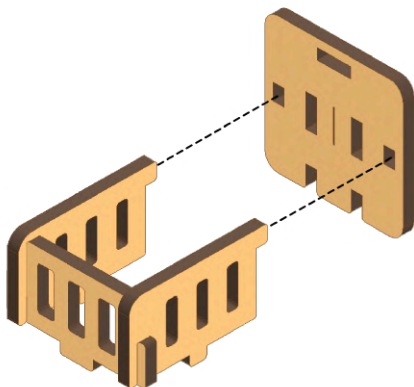
7. Attach **Platform 1** on **Platform Base 1**.



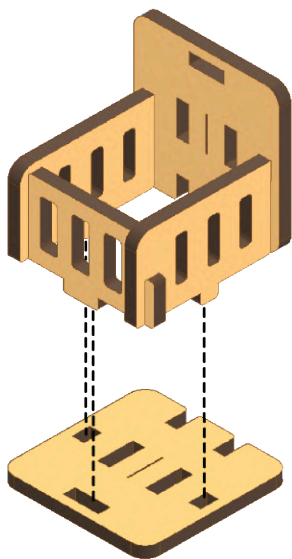
8. Attach both **Grill 2** and **Grill 1**.



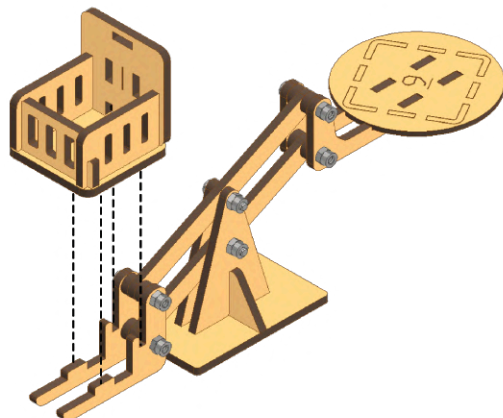
9. Attach **Platform 2** with both **Grill 2**.



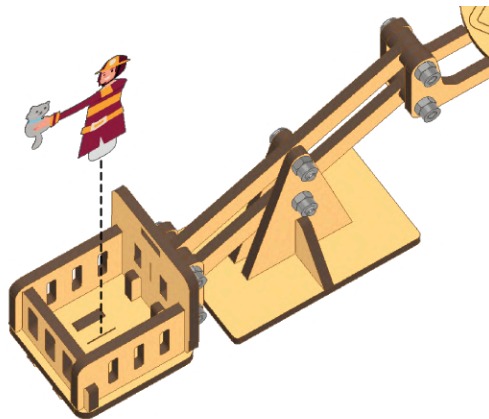
10. Attach another **Platform 2** at the bottom of the assembly.



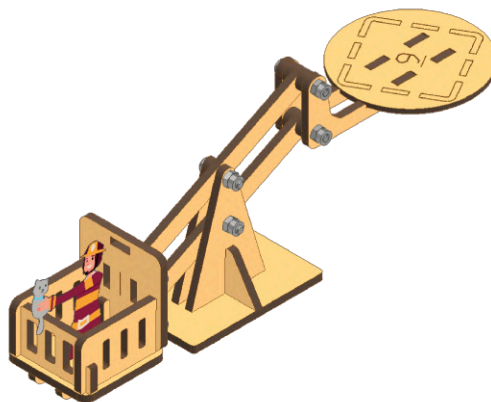
11. Attach **Platform 2** assembly on **Platform Base 2**.



12. Attach the Fireman on **Platform 2**.

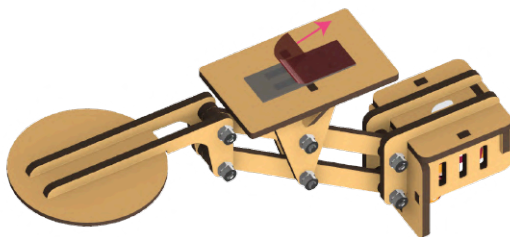


Complete:



13. Apply a piece of **Double-sided Tape** under the **Cat Rescue Crane Assembly** and stick it properly in the specified Rescue Crane box on the arena.





Note: Keep fireman towards tree while placing Cat Rescue Crane Assembly on the arena.



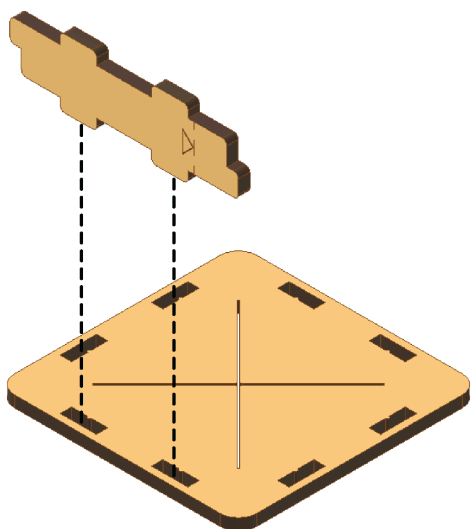
Complete:



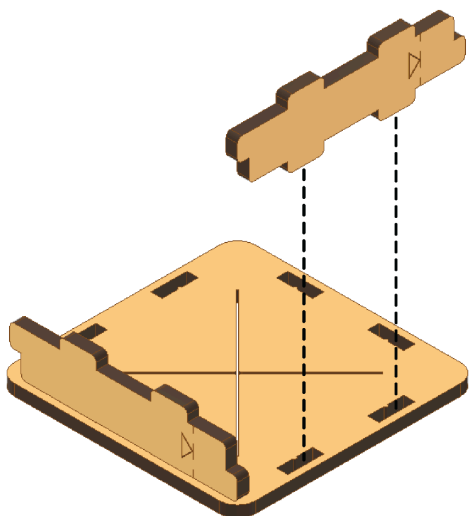
2.3 Tree Assembly

1. Attach all four **Tree Base P2** on top of the **Tree Base P1** one by one as shown.

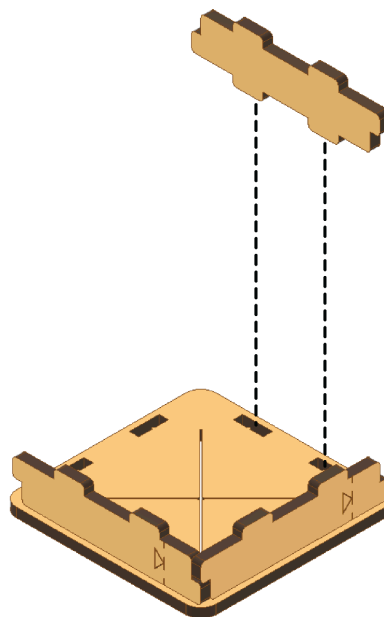
(a)



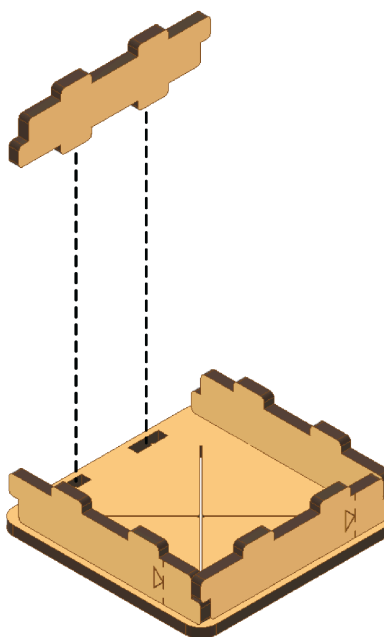
(b)



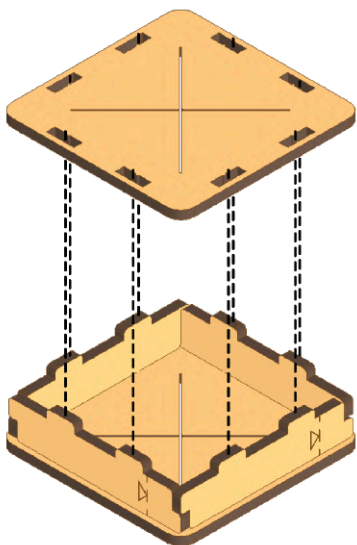
(c)



(d)

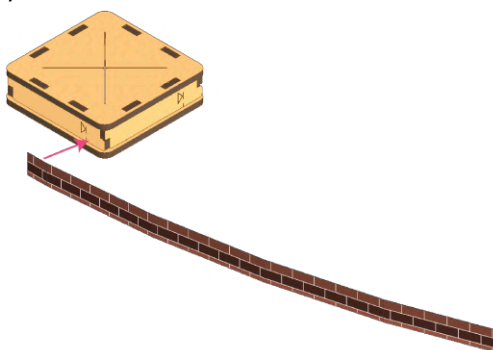


2. Attach another **Tree Base P1** on top.

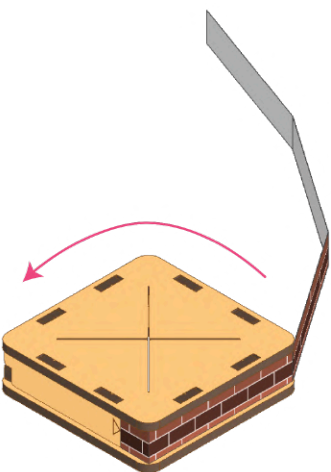


3. Start pasting the **Side Sticker (14. Tree Base)** on the cube from the guides given on the face of the **Tree Base P2** and Sticker.

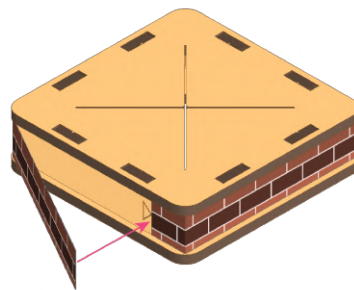
(a)



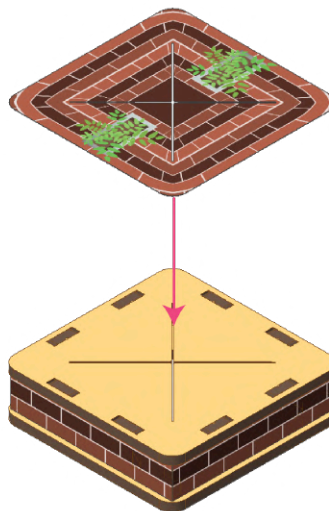
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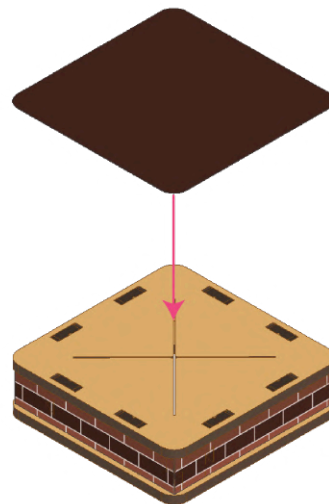
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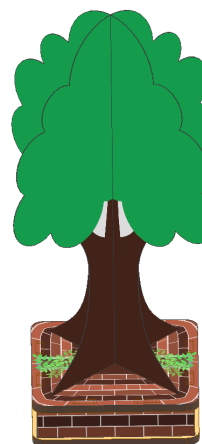
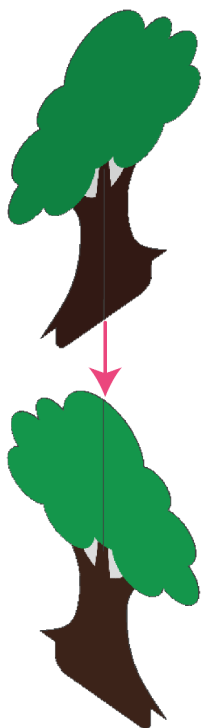
4. Apply the **Top Sticker (14. Tree Base)** on the top of the cube.



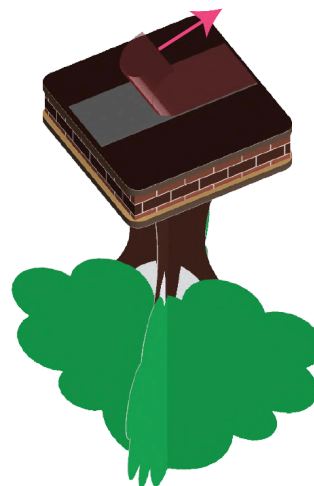
5. Apply the **Bottom Sticker (14. Tree Base)** on the bottom of the cube.



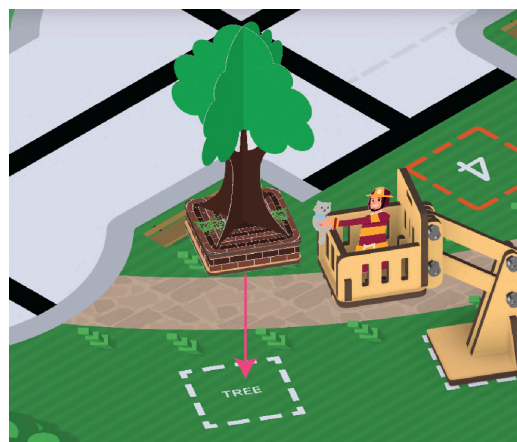
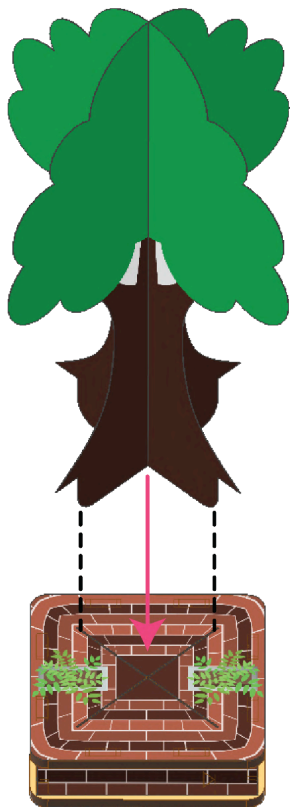
6. Assemble both the **Tree cutouts**.



8. Apply a piece of **Double-sided Tape** under the **Tree Assembly** and stick it properly in the specified Tree Box on the arena.



7. Insert the **Tree** on the cube.



Compete:



3. Camera Setup

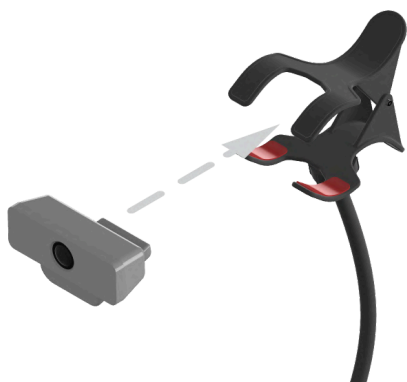
Note: The Arena Object Kit only includes the Camera mount. We recommend buying a webcam that has the following specifications:

Camera connection type: Wired, USB 2.0

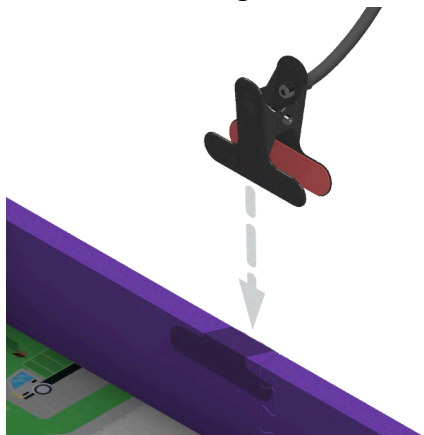
Camera FOV: DFOV 90°

Capture Resolution: FHD (1920 x 1080)

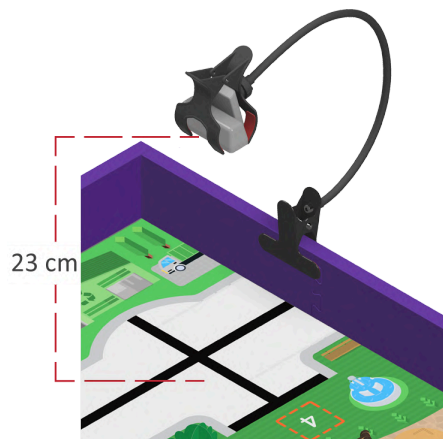
1. Clamp the camera to the camera mount and secure the cables using cable ties.



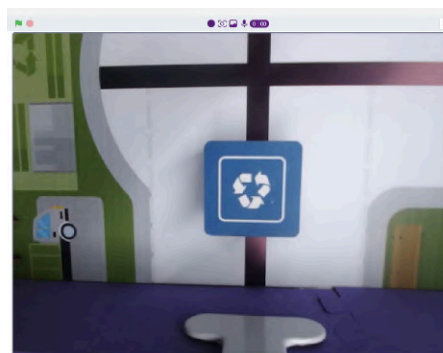
2. Install a camera mount on the arena wall near the recognition area.



3. Adjust the camera height to 23cm from the arena.



Camera Position

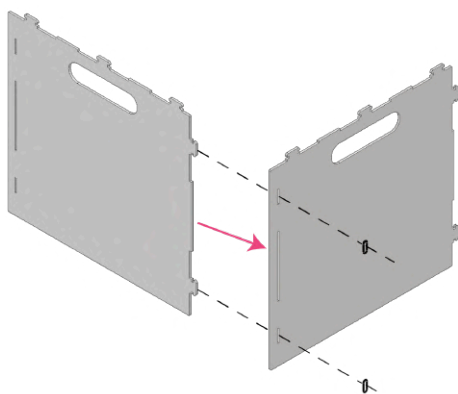


Camera Field of View in Pictoblox

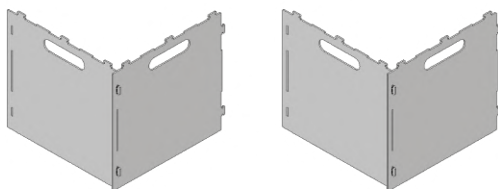
4. Bot Dimension Verification Box

Note: This Bot Dimension Verification Box is only available to Codeavour 5.0 event organizers and partners (not for sale).*

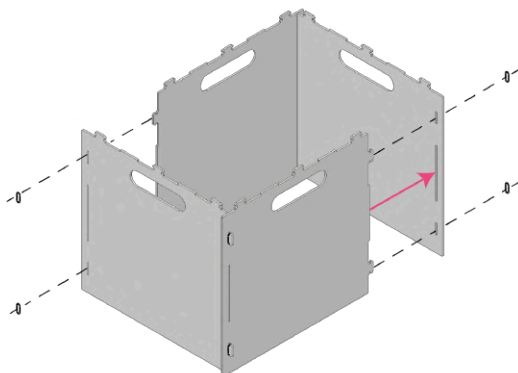
1. Attach two **Side Plates** with a couple of **O-rings**.



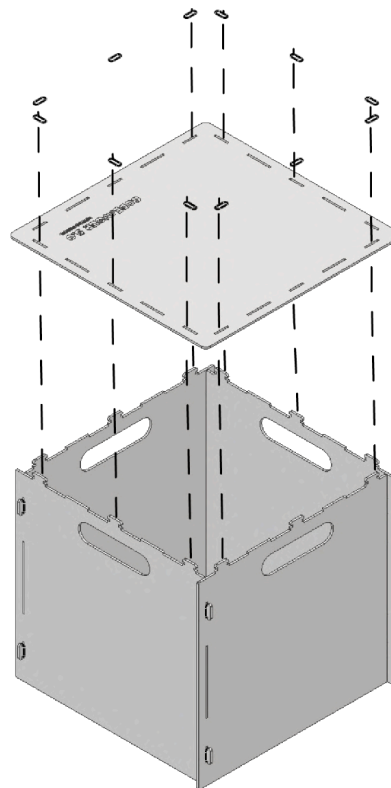
2. Similarly, assemble another two **Side Plates** and make two identical **Side Plate Assemblies**.



3. Attach both **Side Plate Assemblies** with **O-rings**.



4. Attach the **Top Plate** with **O-rings**.



Complete:

