

CODEAVOUR 7.0

INTERNATIONAL

Track 2 - Wellness Wave AI-Robo Challenge

Arena Seup Guide



Leveraging AI and Robotics to Build
a Healthier Tomorrow

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Important:

1. This assembly guide provides instructions for assembling the arena and serves as a reference guide for the initial positions of game objects.
2. Please refer to the [Codeavour 7.0 Track 2 Rules and Regulation](#) document for game rules.
3. Images are only for representation purposes. Illustrations and actual items may vary slightly.
4. Refer to the component list provided with the Codeavour 7.0 Arena Objects Kit and Arena Fence Kit to identify the parts.
5. If you find the assembly process challenging, please seek assistance from your mentor.
6. All models should be aligned with the markings of the arena.
7. Carefully review the illustrations and instructions before assembling any part.
8. Handle all parts with care.

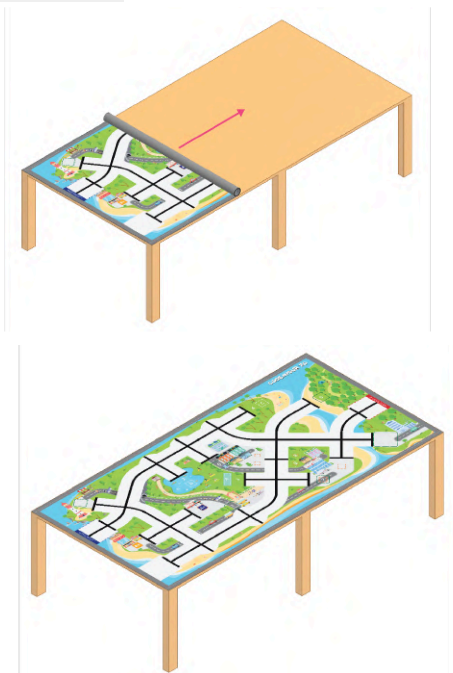


1. Arena Setup:

1.1 Arena Setup on the table

1. Unroll the Printed Arena on an 8x4 feet Table with a smooth flat surface and align it perfectly in the centre.

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



Complete:



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

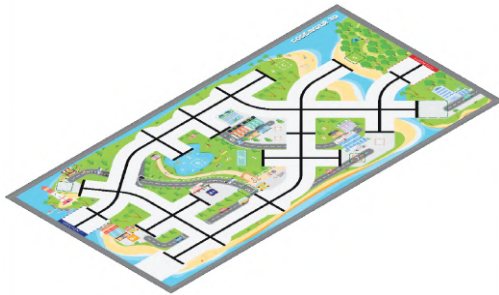
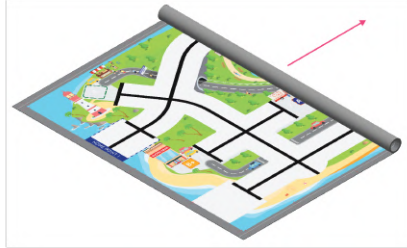
Note: The tape shouldn't cover the area inside the grey edge of the arena.



1.2 Arena Setup on the floor

1. Unroll the Printed Arena flat on a smooth-levelled floor.

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

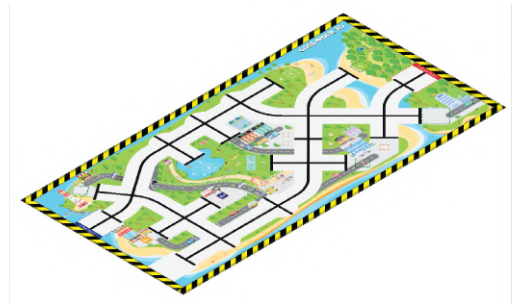


2. Fix the arena on the floor by covering the grey edges of the arena under the tape.

Note: The tape should be aligned to the inner edge of the grey border of the arena and shouldn't go inside.



Compete:



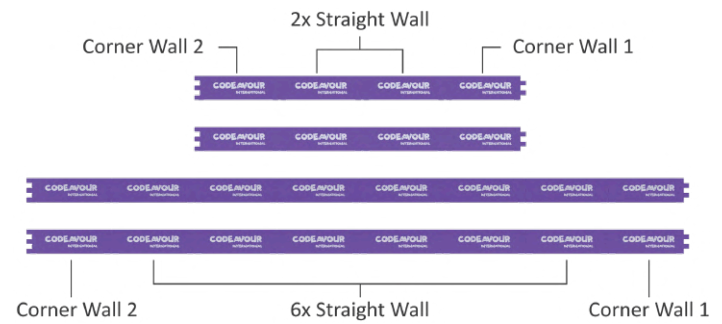
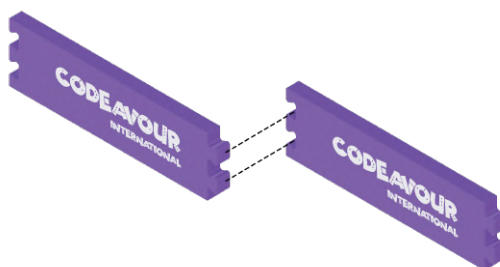
1.3 Wall Assembly

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.



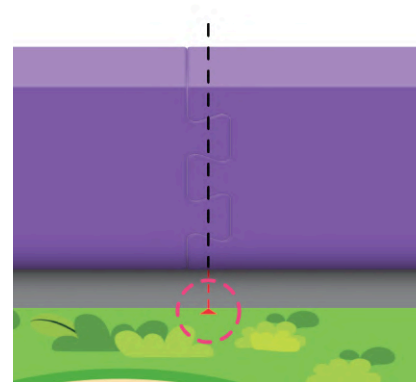
2. Assemble two sets of Straight walls of x2 and x6 pieces along with Corner Wall 1 and Corner Wall 2.



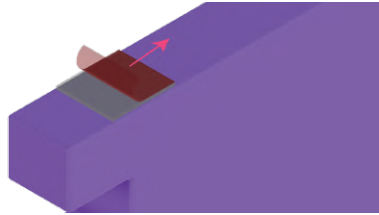
3. Assess how the wall assemblies will align with each other and to the arena.



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

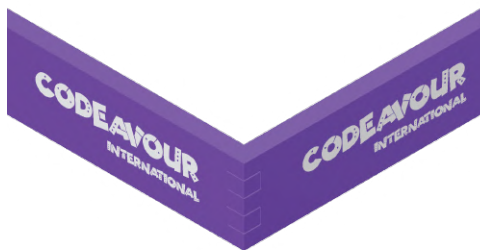
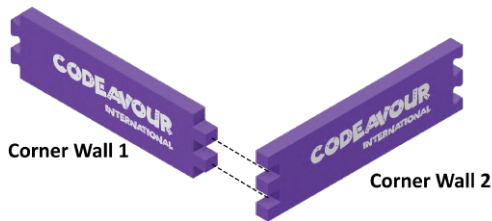


4. Peel-off the top of all the double-sided tapes pasted on the walls.

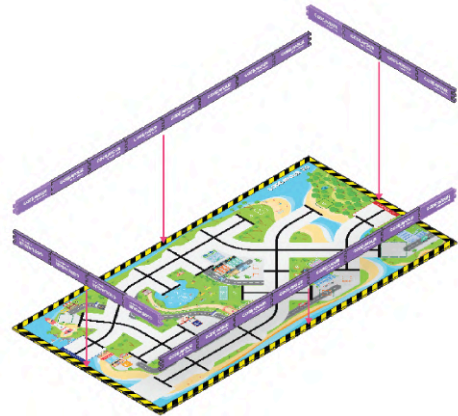


5. Fix the sets of walls with Corner walls on the Arena with care, confirming their marked placement on the Arena and also mending corner wall joints.

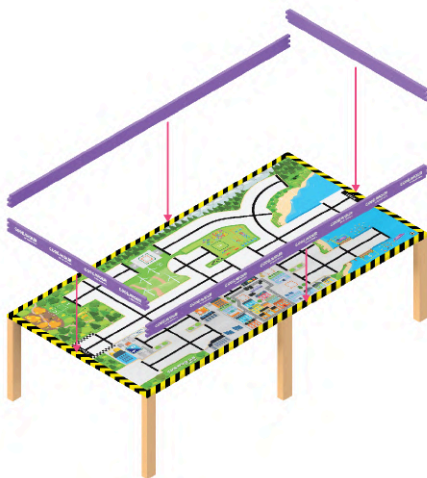
Example of Corner wall fixture:



Wall assembly on-floor arena:

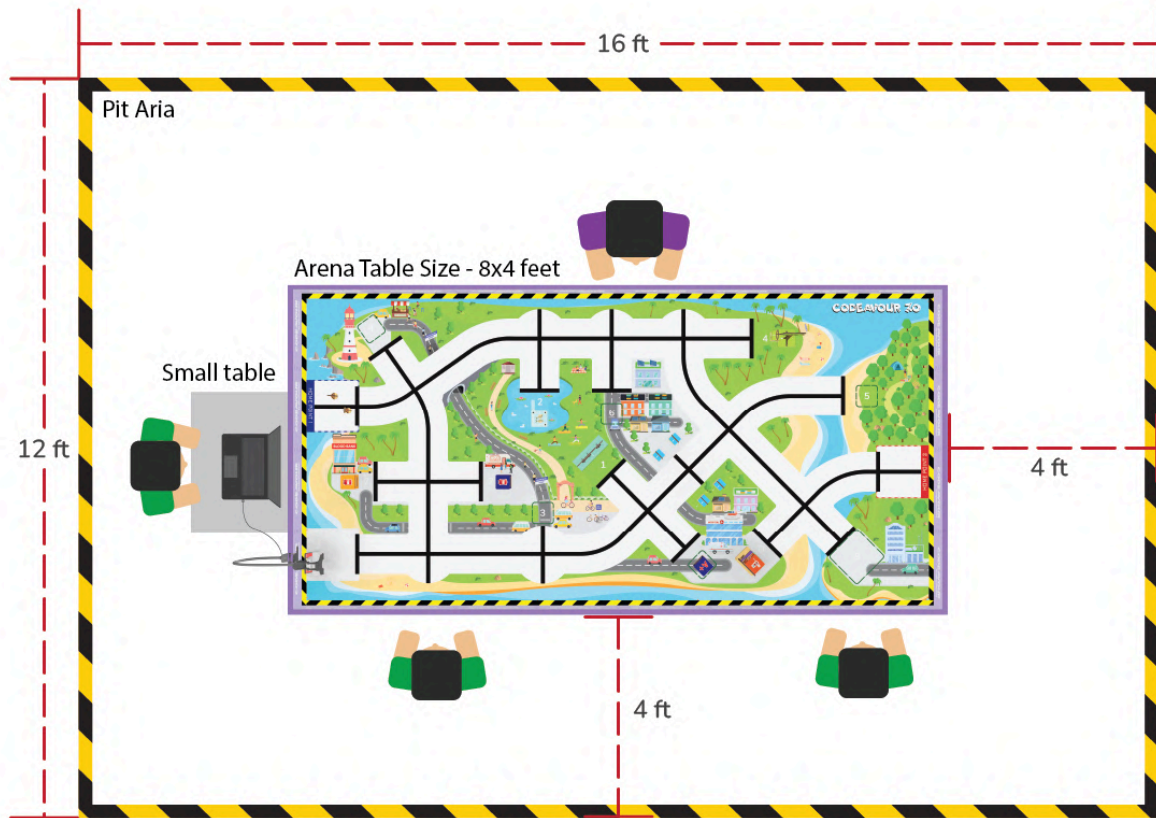


Wall assembly on-table arena:



1.4 Pit area marking

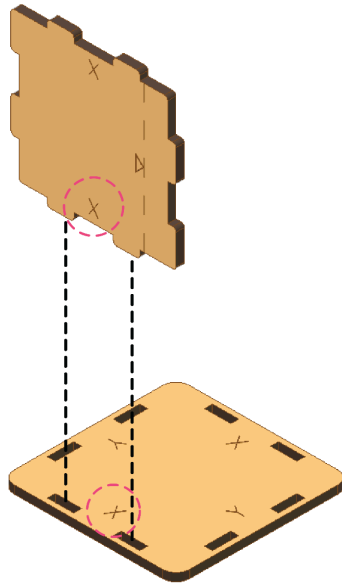
1. Apply **Black and Yellow tape** around the arena leaving exactly **4 feet** from each side.



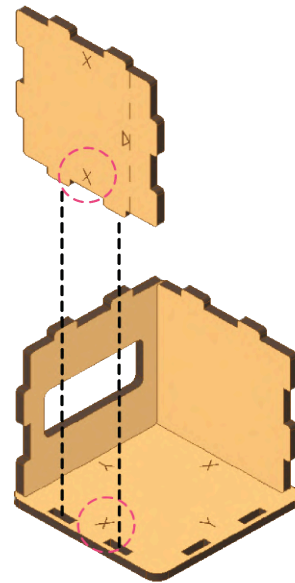
2. Arena Objects Assembly

2.1 Cube Assembly

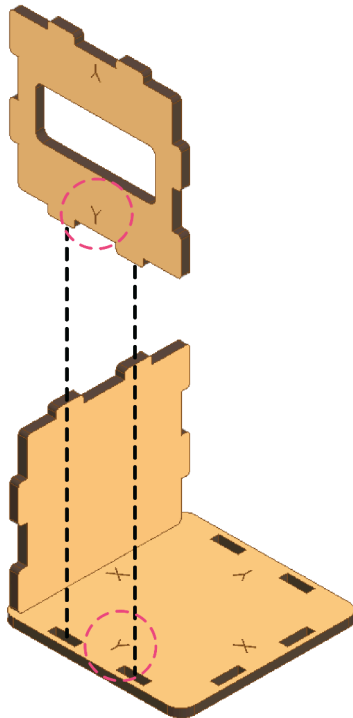
1. Attach **Cube P3** to **Cube P1** by matching the letter 'X' on both parts.



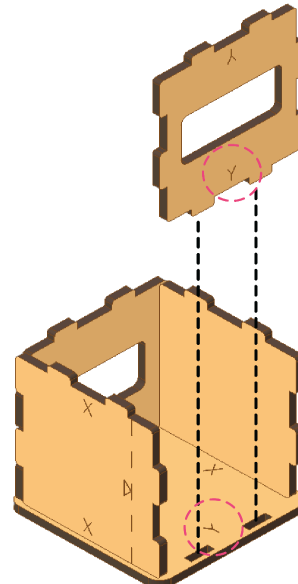
3. In the same way, attach another **Cube P2** and **Cube P3** to **Cube P1**.
(a)



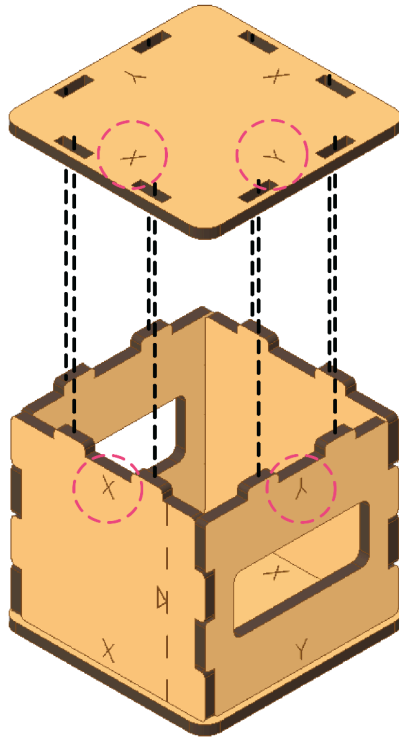
2. Attach **Cube P2** to **Cube P1** by matching the letter 'Y' on both parts.



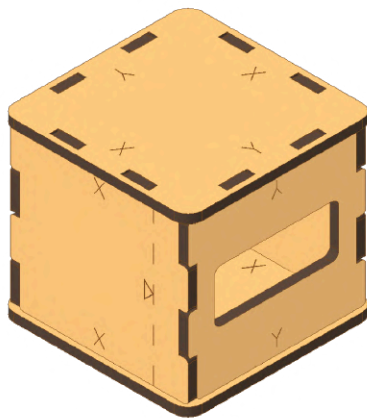
(b)



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

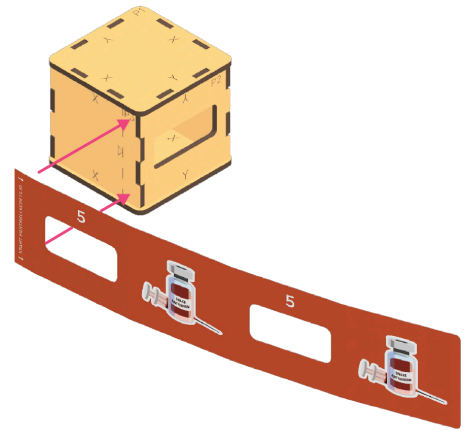


Assembled View:

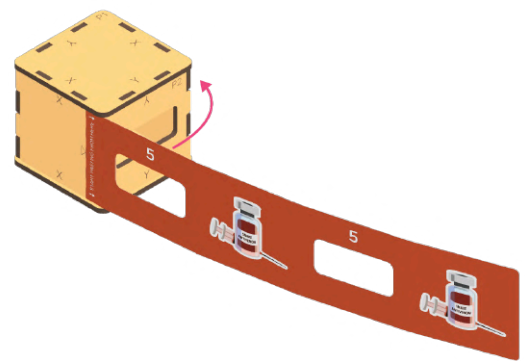


5. Start pasting the **Side Sticker** on the cube from the guides given on the face of **Cube P3** and Sticker.

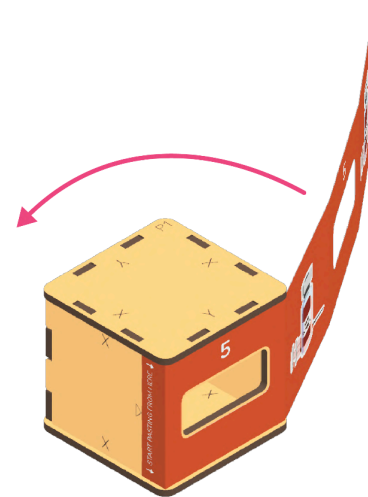
(a)



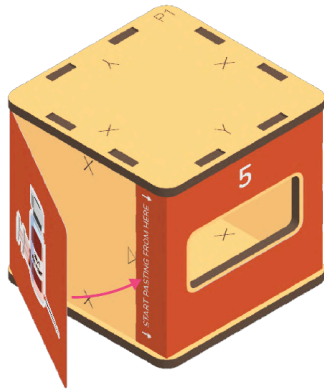
(b)



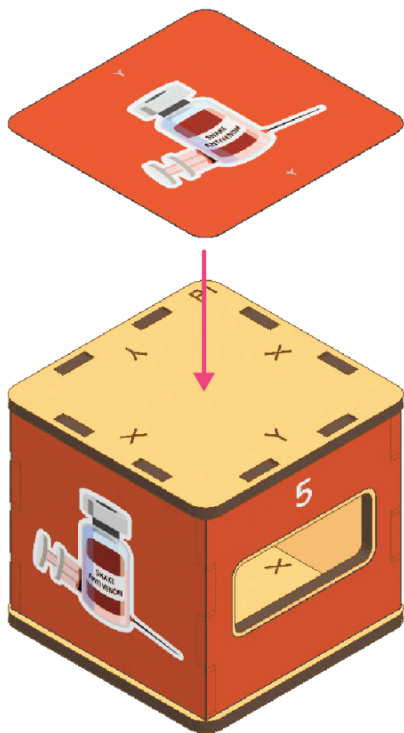
(c)



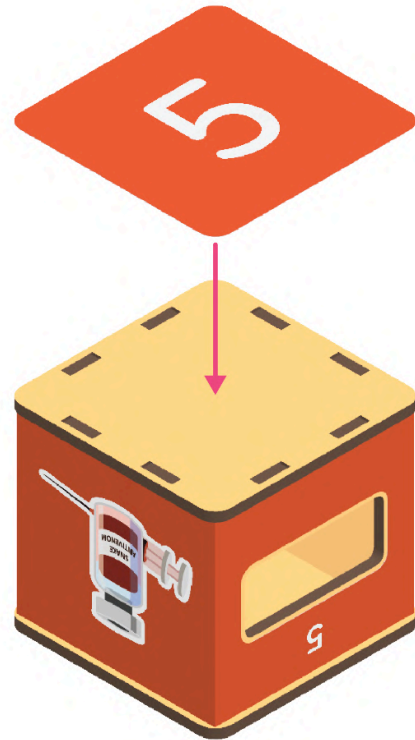
(d)



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.



Complete:



8. In the same way, assemble all 8 cubes.



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

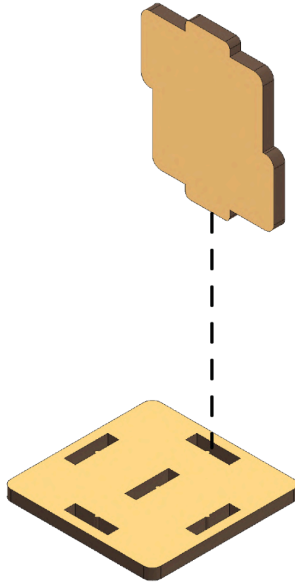


7. Number 2

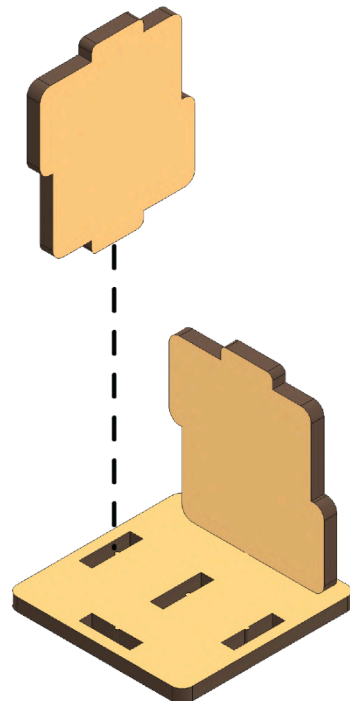
2.2 Small Cube Assembly

1. Attach four **Small Cube P2** on top of the **Small Cube P1** one by one as shown.

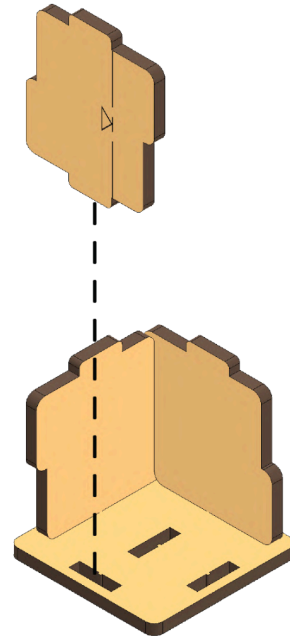
(a)



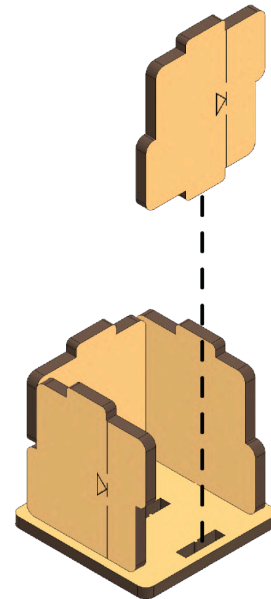
(b)



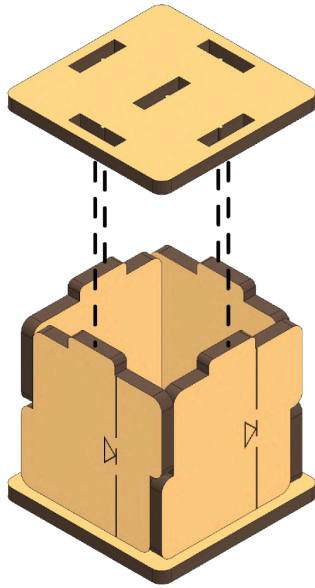
(c)



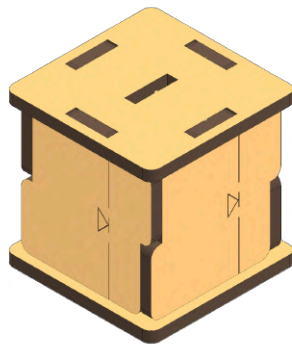
(d)



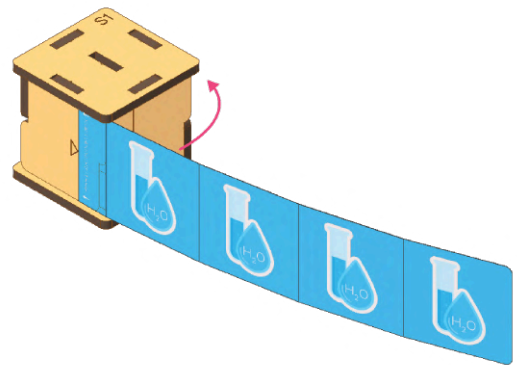
2. Attach another **Small Cube P1** to the part faces.



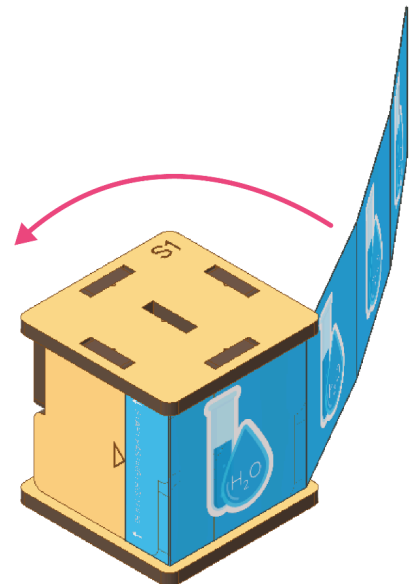
Assembled View:



(b)

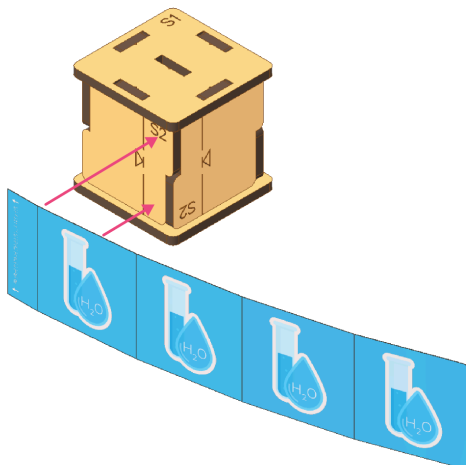


(c)

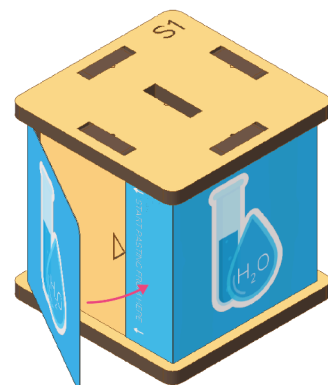


3. Start pasting the **Side Sticker** on the cube from the guides given on the face of **Cube P3** and Sticker.

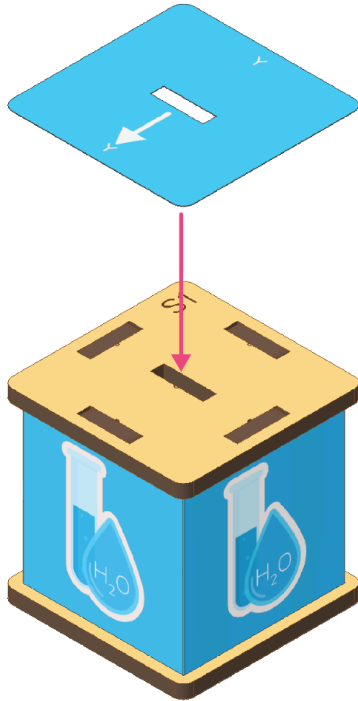
(a)



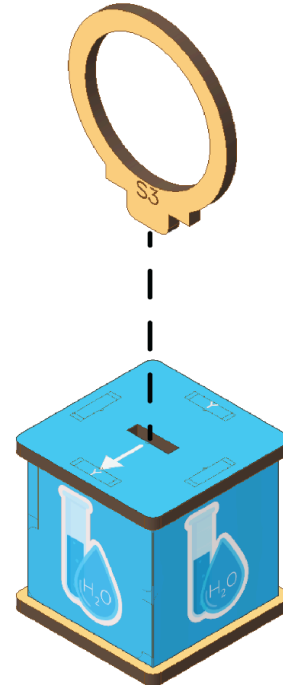
(d)



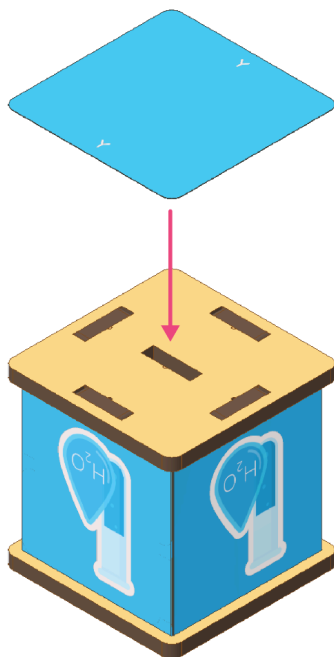
4. Apply the **Top Sticker** on the top side of the cube by matching the centre slot on the Top Sticker and the cube.



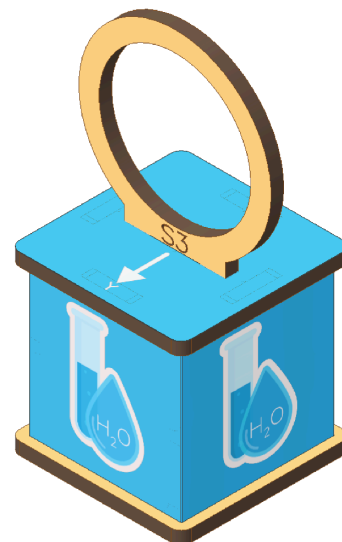
6. Secure the **Ring** to the **Small Cube P1** at the top of the Plastic Waste Cube Assembly.



5. Apply the **Bottom Sticker** on the bottom side of the cube by matching the letter 'Y' of the top sticker.



Complete:



7. In the same way, assemble all 5 cubes (four water sample cubes and one coconut cube).



1. Water Samples

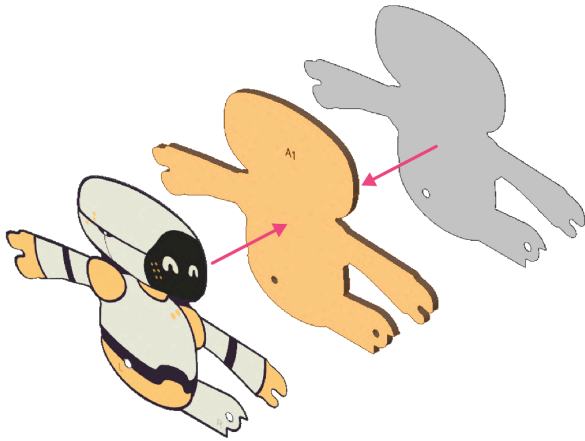


2. Coconut

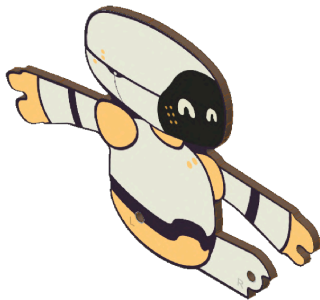
3 Object (A)

Roliver Assembly

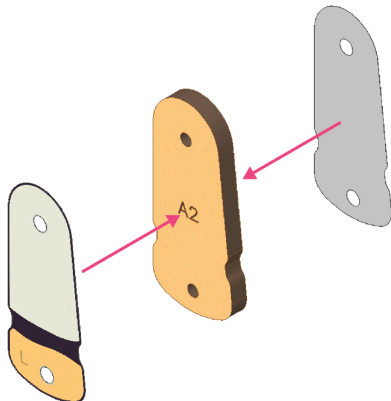
1. Apply the **A1 stickers** from the sticker sheet **S1** on both sides of the **(A1) Roliver Body** as shown below.



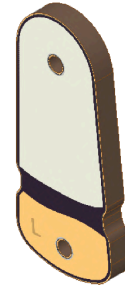
Assembled View:



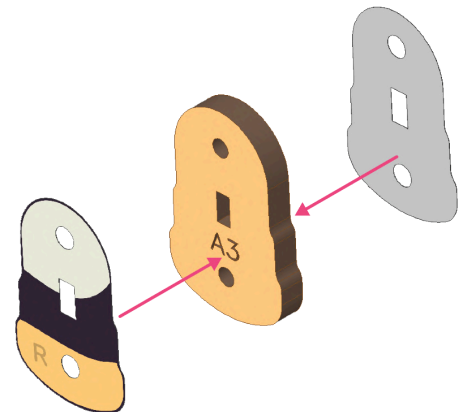
2. Apply the **A2 stickers** from the sticker sheet **S1** on both sides of the **(A2) Left Leg** as shown below.both are positioned to overlap.



Assembled View:



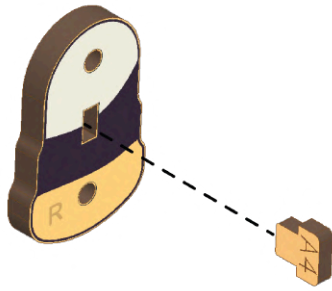
3. Apply the **A3 stickers** from the sticker sheet **S1** on both sides of the **(A3) Right Leg** as shown below.



Assembled View:



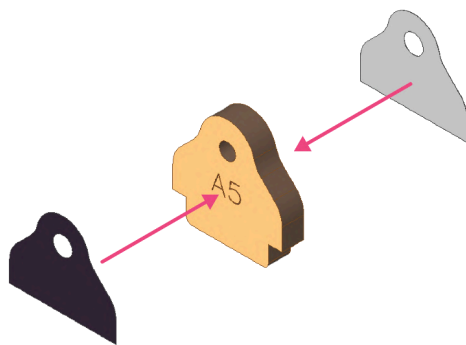
4. Now, attach **(A4) Stopper** to the **(A3) Right Leg** as shown below .



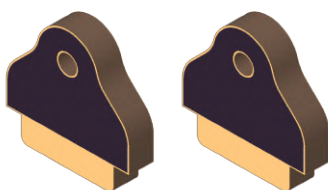
Assembled View:



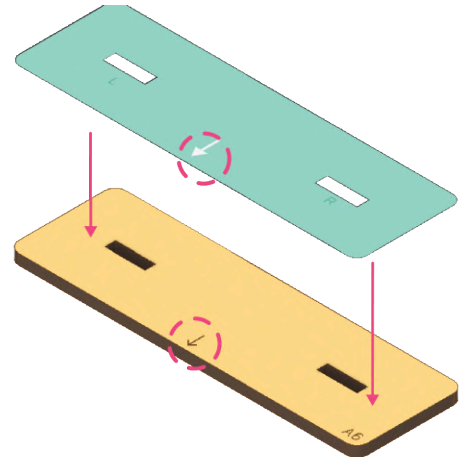
5. Apply the **A5 stickers** from the sticker sheet **S1** on both sides of the two **(A5) Base Connector** as shown below.



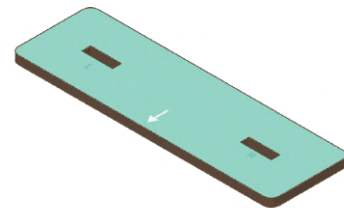
Assembled View:



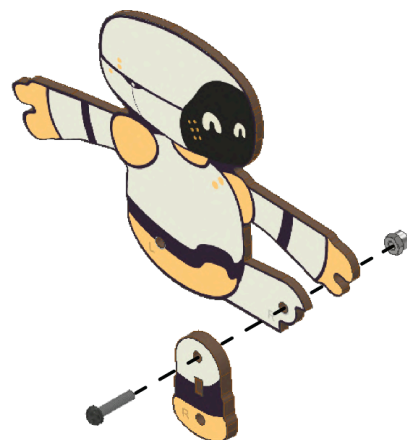
6. Apply the **A6 sticker** from the sticker sheet **S1** on top of **(A6) Base**, align the Arrow mark as shown below.



Assembled View:

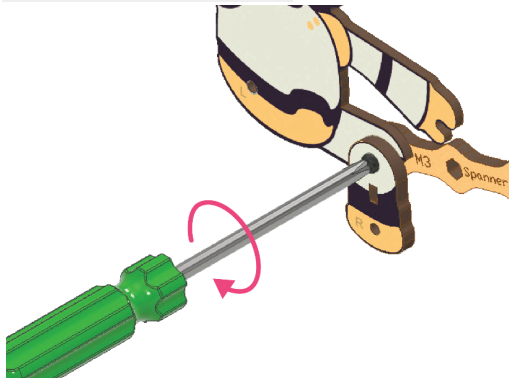


7. Now, attach **(A3) Right Leg**, ensuring the stopper comes behind facing outward. Secure them using **M3 Bolts (14mm)** and **M3 Lock Nuts**, tightening them with an **M3 Spanner**, as shown below.

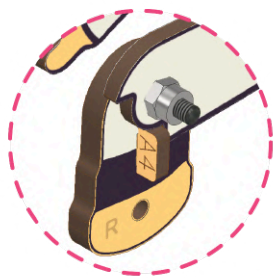


Note: Keep the M3 Lock Nuts slightly loose to ensure good

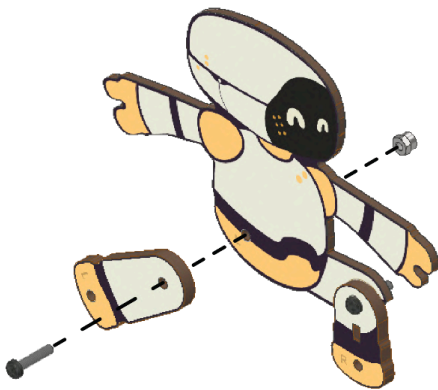
mechanism operation.



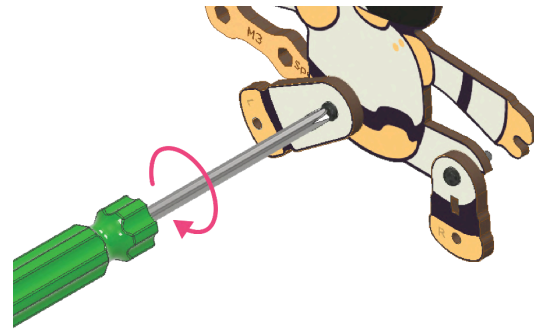
Back Side View:



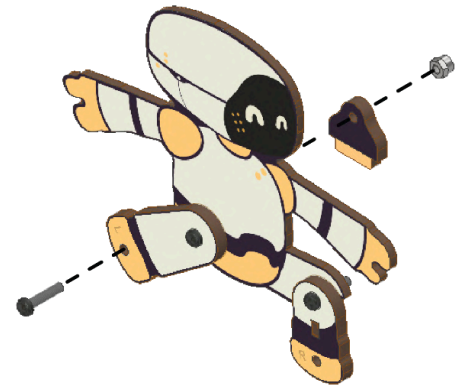
- Attach **(A2) Left Leg** to the **(A1) Roliver** Body Secure them using **M3 Bolts (14mm)** and **M3 Lock Nuts**, tightening them with an **M3 Spanner**, as shown below.



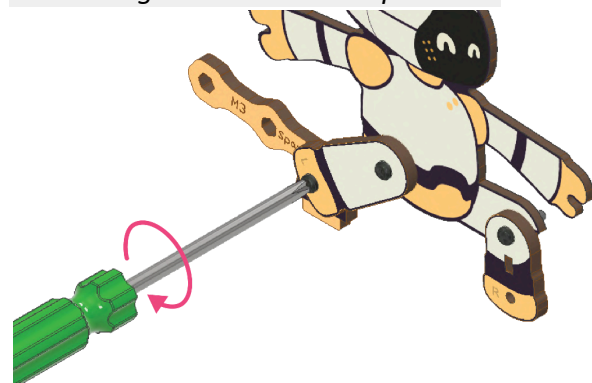
Note: Keep the M3 Lock Nuts slightly loose to ensure good mechanism operation.



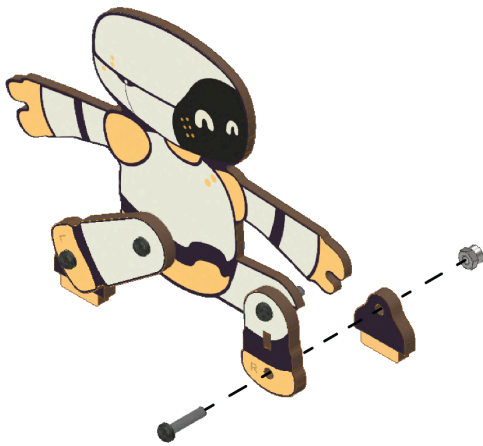
- Attach **(A5) Base Connector** to the **(A2) Left Leg** Secure them using **M3 Bolts (14mm)** and **M3 Lock Nuts**, tightening them with an **M3 Spanner**, as shown below.



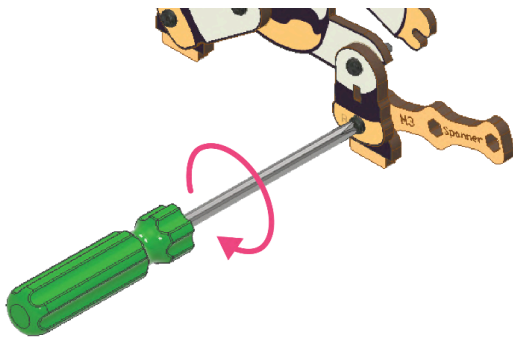
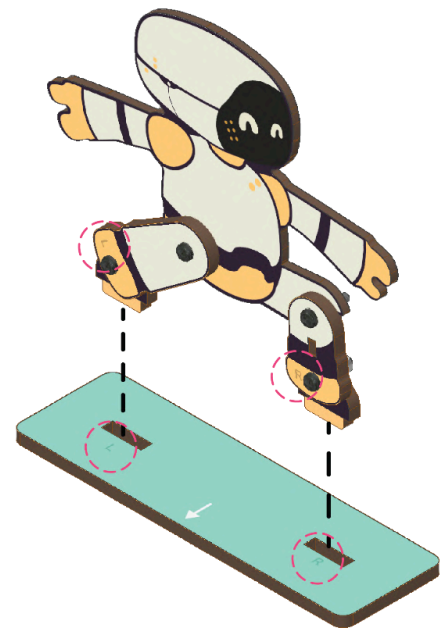
Note: Keep the M3 Lock Nuts slightly loose to ensure good mechanism operation.



- Attach **(A5) Base Connector** to the **(A3) Right Leg** Secure them using **M3 Bolts (14mm)** and **M3 Lock Nuts**, tightening them with an **M3 Spanner**, as shown



Note: Keep the M3 Lock Nuts slightly loose to ensure good mechanism operation.



Complete:

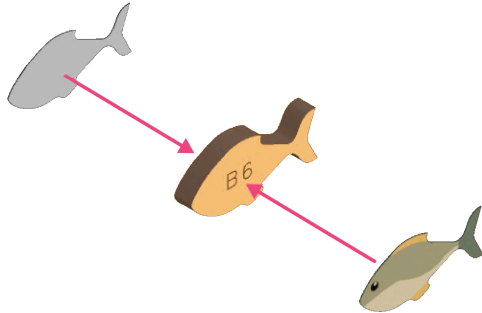
Assembled View:



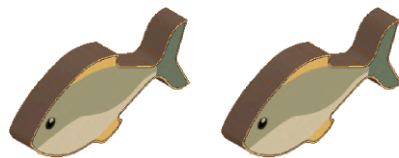
1. Attach the both **(A5) Base Connectors** to the **(A6) Base**, align the **L And R** marks on **Roliver Leg** with the **Base** markings as shown below.

2.4 Object (B)
Aquarium Assembly

1. Apply the **B6 stickers** from the sticker sheet **S3** on both sides of the two **(B6) Fish** as shown below.

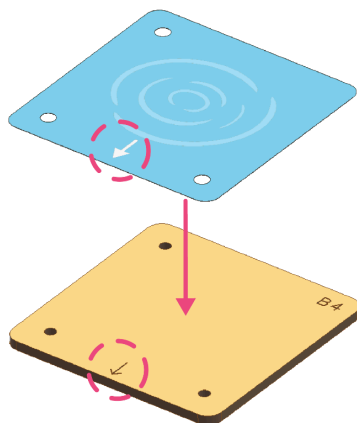


Assembled View:

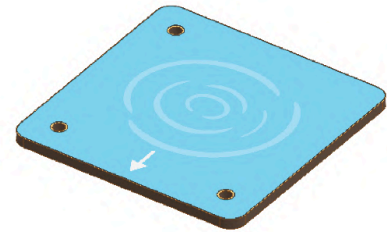


2. Apply the **B4 stickers** from sticker sheet **S6** on top of **(B4) Base 1**, align the arrow marks as shown below.

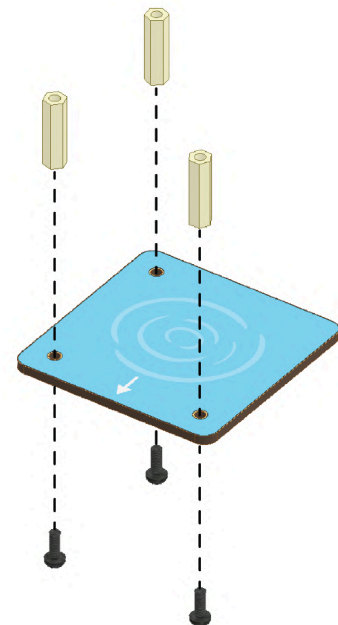
b



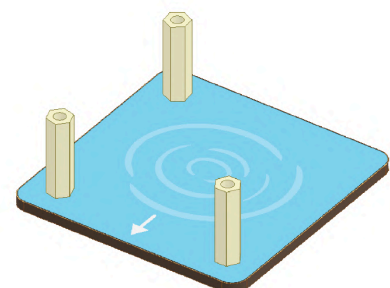
Assembled View:



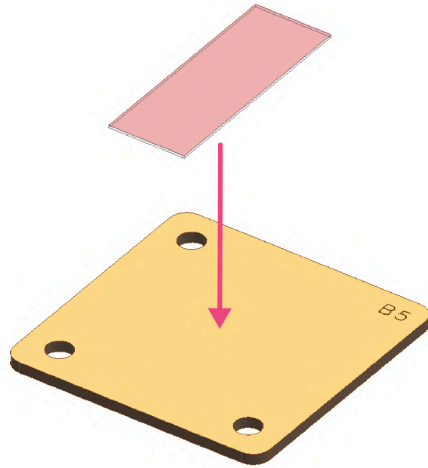
3. Attach 3 **Spacer** to the **(B4) Base 1** using **M3 Bolts (8mm)**, tighten them with a **Screw Driver**.



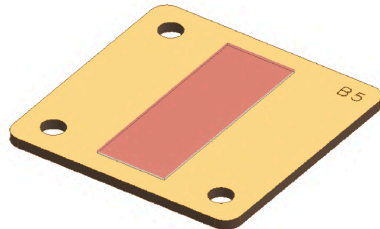
Assembled View:



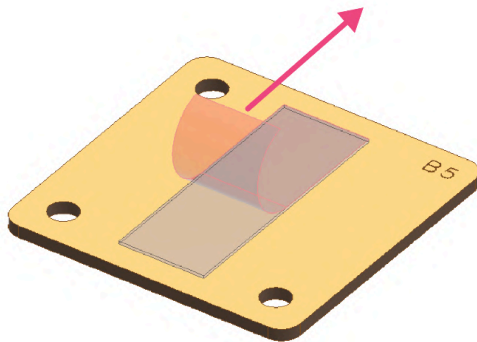
4. Apply the Doubleside tap on top of the **(B5) Base 2** as shown below.



Assembled View:

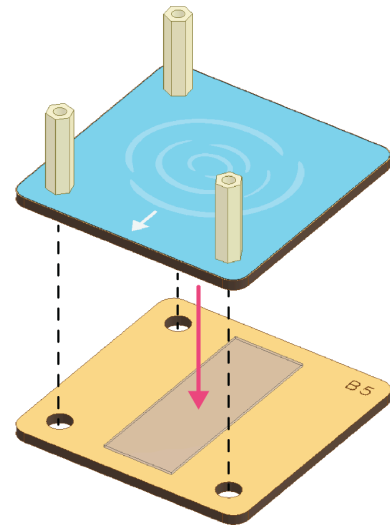


5. Peel off the cover of the double-sided tape

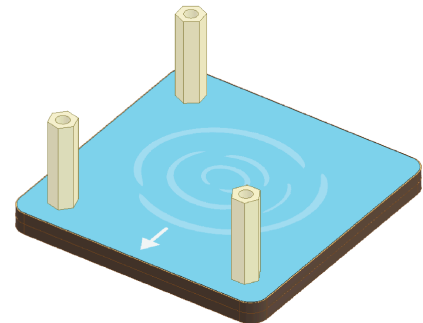


6. Stick the **(B4) Base 1** on to the **(B5) Base 2** in a way that the screw heads of (B4) Base 1 fit inside the

holes of (B5) Base 2



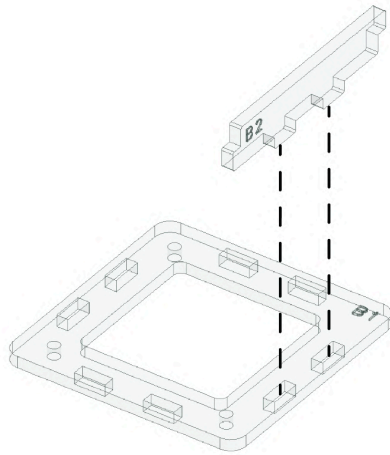
Assembled View:



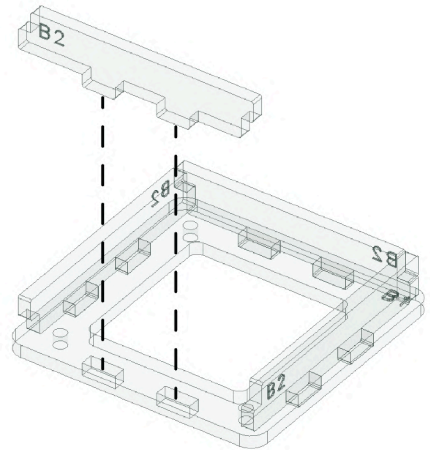
7. Attach four **(B2) Walls** of the aquarium to the **(B1)Base** of the aquarium one by one as shown below .

*Note: Use **Super Glue** or **Fevikwik** to stick the acrylic parts together. Apply only a small amount of glue.*

a.

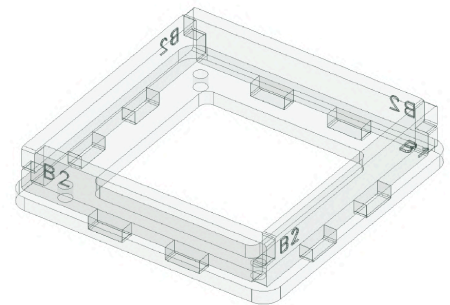
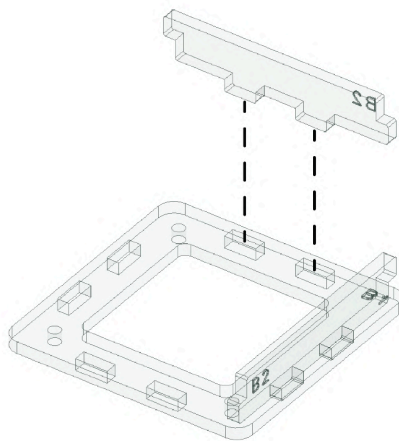


d.

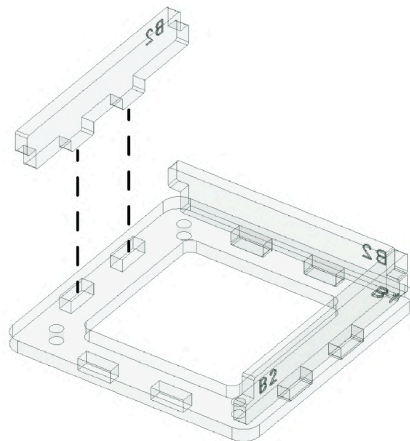


Assembled View:

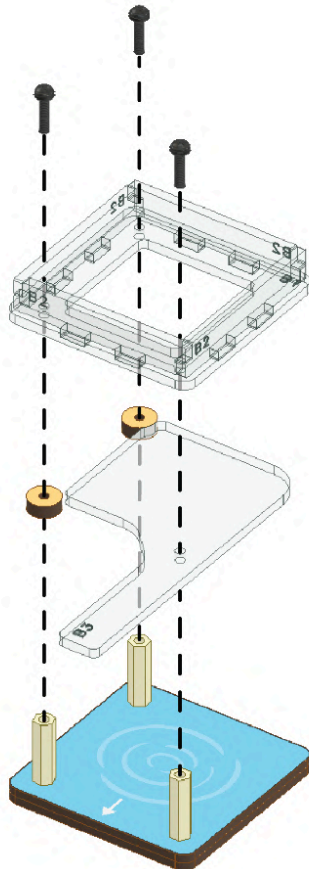
b.



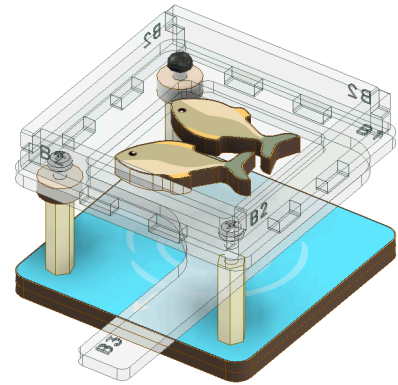
c.



8. Now ,attach **Base Assembly** and **Aquarium Assembly** keeping the **Flash Door** and **Spacer** in between, using **M3 Bolts (12 mm)** as shown below

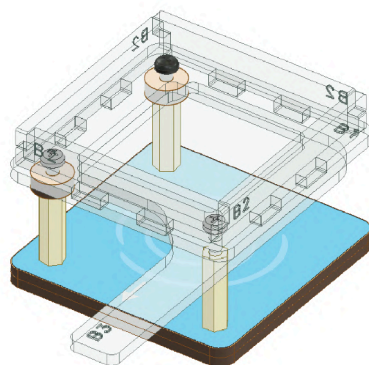


Complete:



Note: Keep the M3 Lock Nuts slightly loose to ensure good mechanism operation.

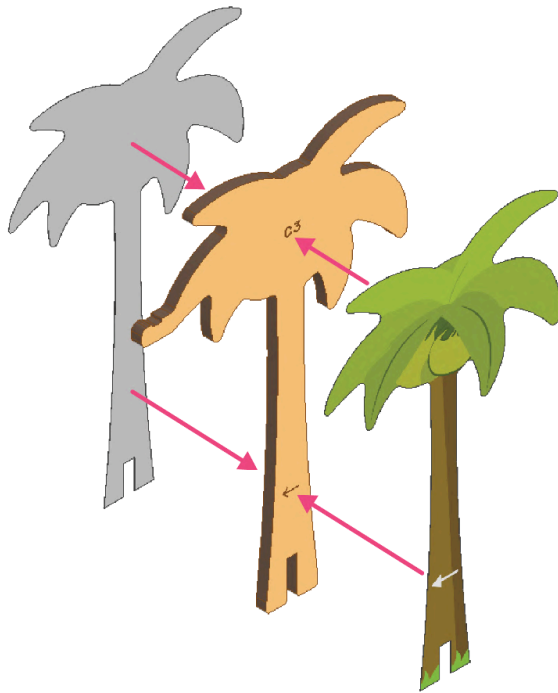
Assembled View:



2.5 Object (C)

Coconut Tree Assembly

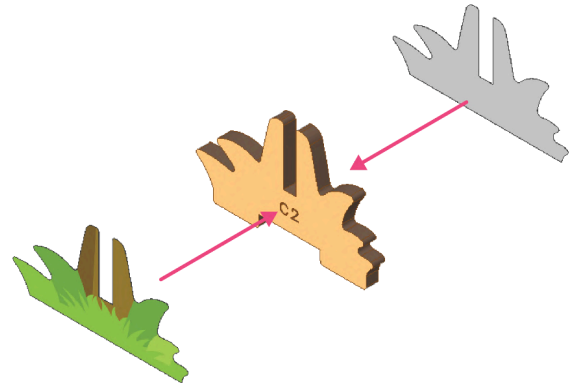
1. Apply the **C3 stickers** from the sticker sheet **S3** on both sides of the **(C3) Coconut Tree** as shown below.



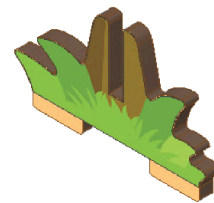
Assembled View:



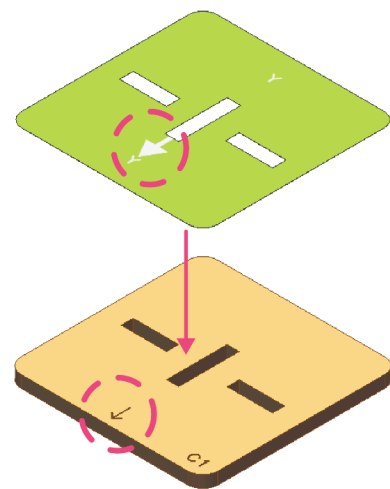
2. Apply the **C2 stickers** from the sticker sheet **S3** on both sides of the **(C2) Grass** as shown below.



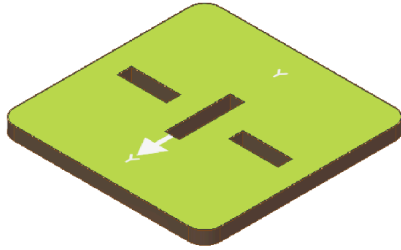
Assembled View:



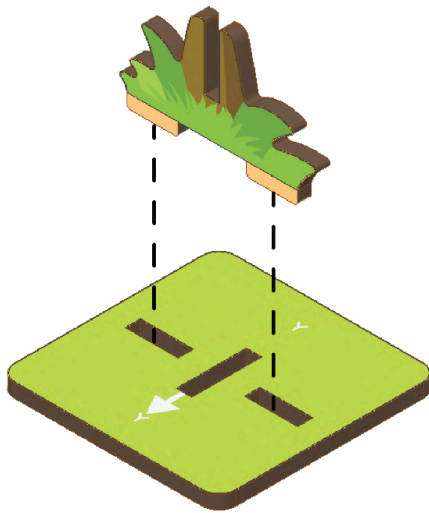
3. Apply the **C1 sticker** from sticker sheet **S4** on top of **(C1) Base 1** as shown below.



Assembled View:



4. Now, attach **(C2) Grass** to the **(C1) Base** as shown below .



Assembled View:



5. Now, attach **(C3) Coconut Tree** to the **(C1) Base** as shown below .



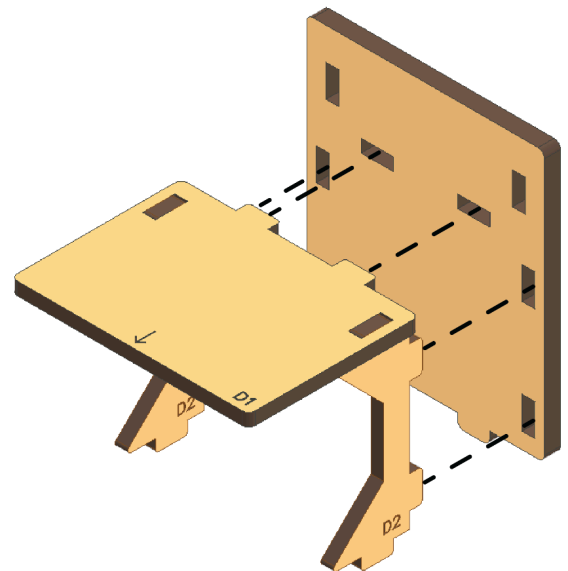
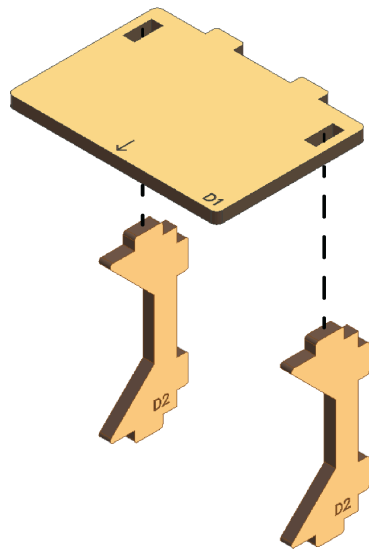
Complete:



2.6 Object (D)

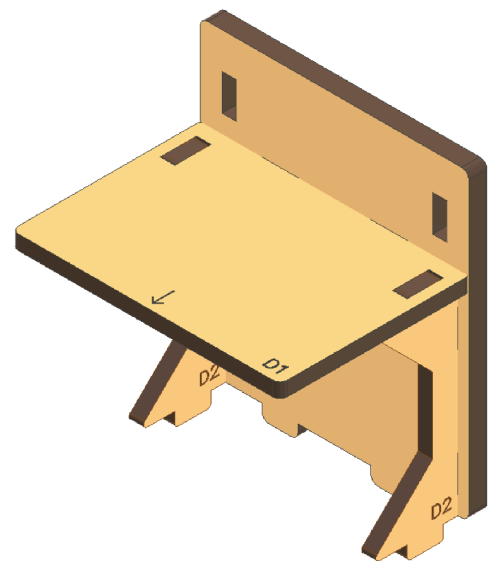
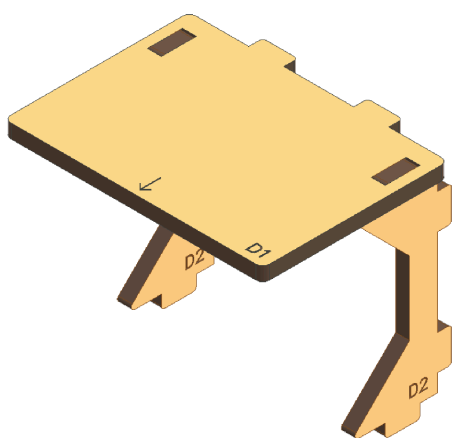
Building Assembly

1. Now, attach two **(D2) support 1** to the **(D1) Platform** as shown below.



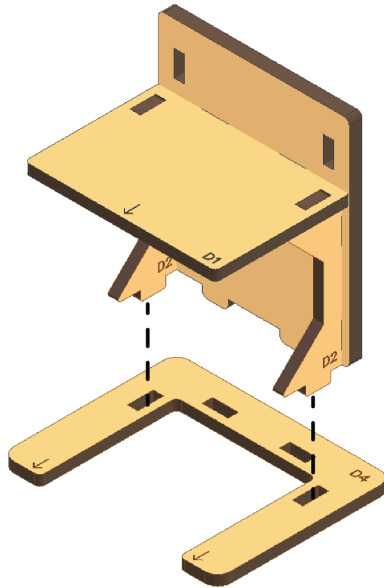
Assembled View:

Assembled View:

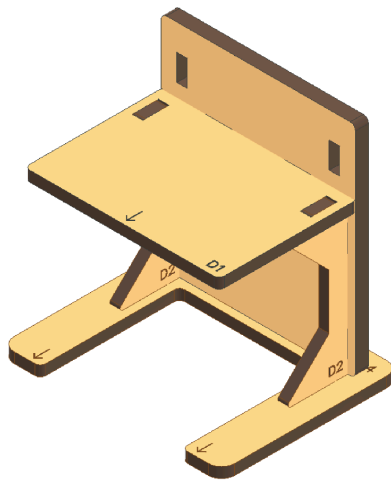


2. Now, attach the **(D3) Wall** to the assembled part as shown below.

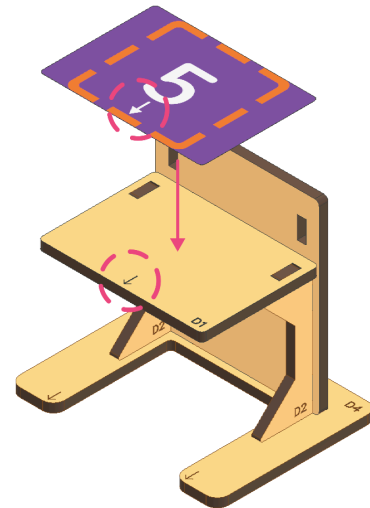
3. Attach the **(D4) Base** to the assembled part as shown below .



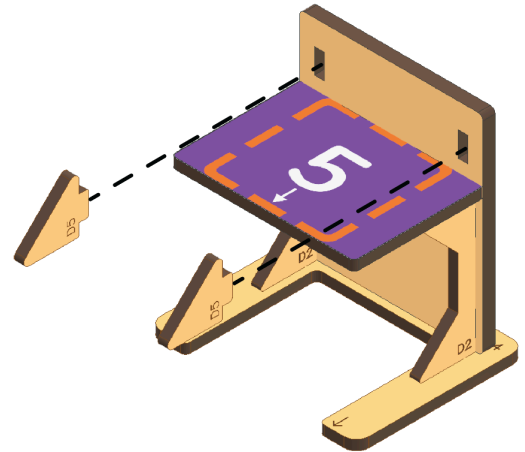
Assembled View:



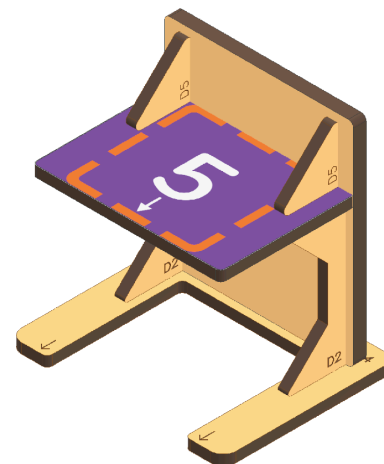
4. Apply the **D1 sticker** from sticker sheet **S4** on top of **(D1) Platform** as shown below.



5. Attach the two **(D5) Support 2** to the assembled part as shown below .

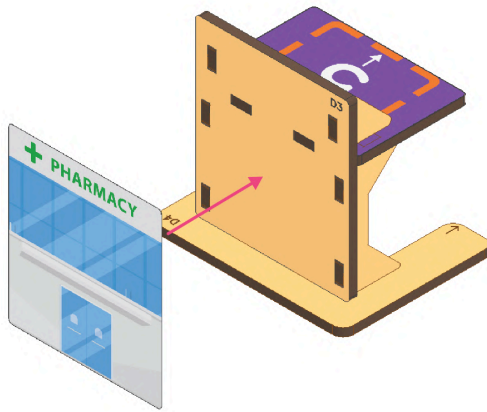


Assembled View:

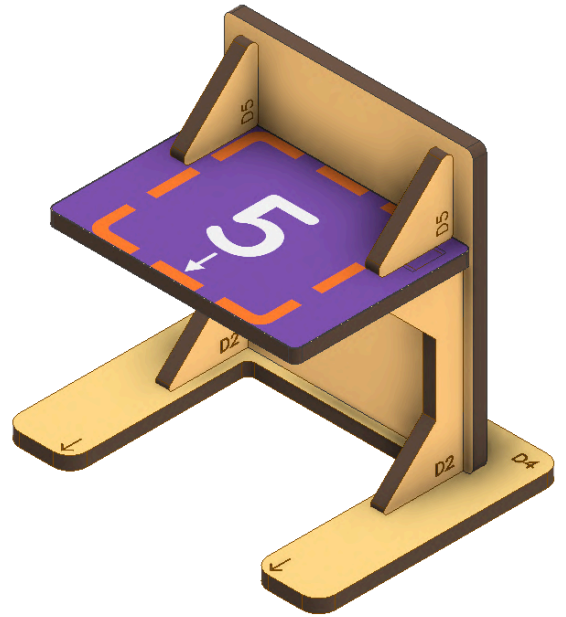


6. Apply the **D3 sticker** from sticker sheet **S5** on top of **(D3) Wall** as

shown below.



Complete:

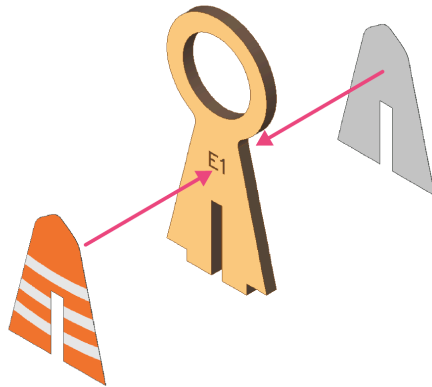


Assembled View:



2.7 Object (E)
Traffic Cone

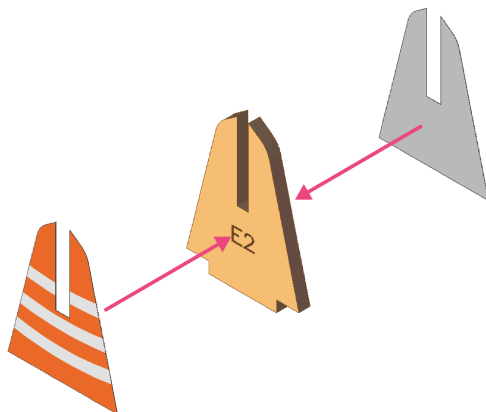
1. Apply the **E1 stickers** from the sticker sheet **S5 or S6** on both sides of the **(E1) Traffic Cone Part 1** as shown below.



Assembled View:



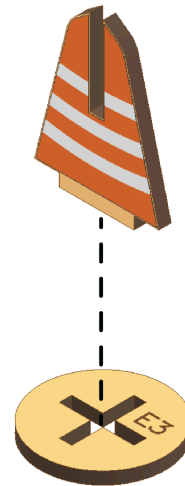
2. Apply the **E2 stickers** from the sticker sheet **S5 or S6** on both sides of the **(E2) Traffic Cone part 2** as shown below.



Assembled View:



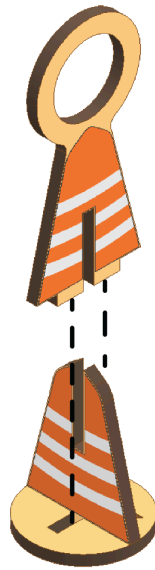
3. Now, attach **(E2) Traffic Cone part 2** to the **(E3) Base** as shown below.



4. attach **(E1) Traffic Cone part 1** to the **(E3) Base** as shown below .

1. Assemble the second **Traffic Cone** in the same way

Complete:



Assembled View:

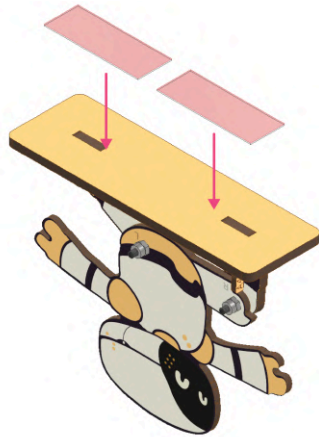


3. Placement of Objects on the Arena

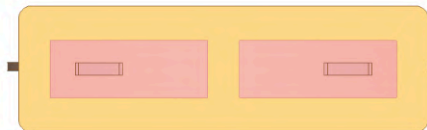
3.1 Object (A)

Roliver Placement

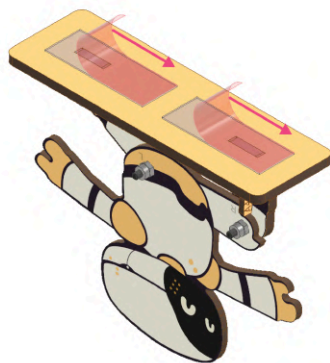
1. Cut and paste pieces of double-sided tape (about 5 cm in length) to the bottom of the **Roliver Assembly** as shown below.



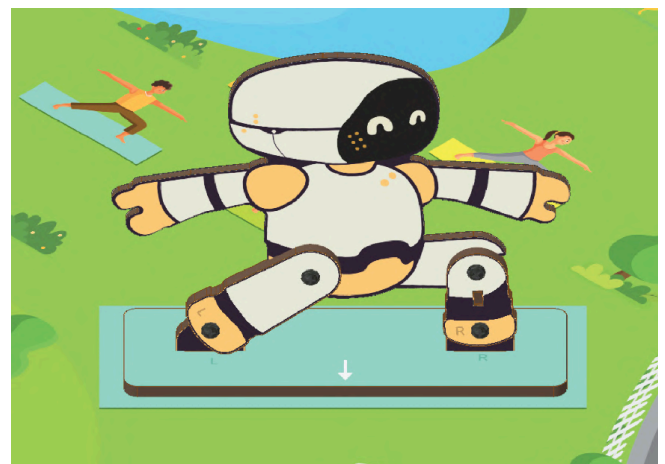
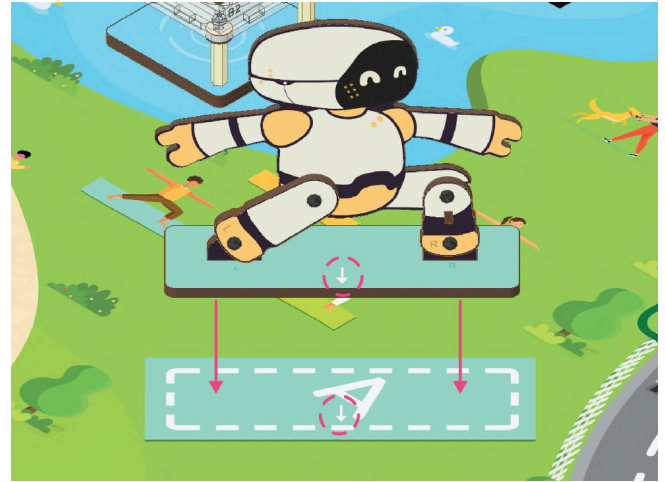
Bottom View:



2. Peel off the cover of the double-sided tape.



3. Place the **Roliver Assembly** in its marked area **(A)**, aligning it with the white guidelines and the arrow mark on both the object and the arena.

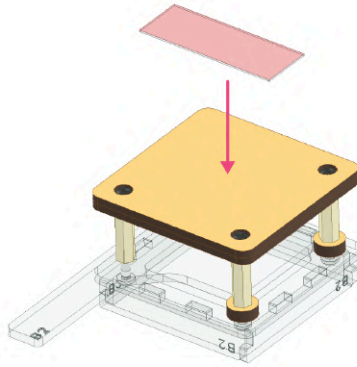


Compete:

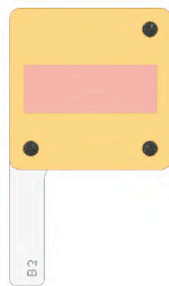
3.2 Object (B)

Aquarium Placement

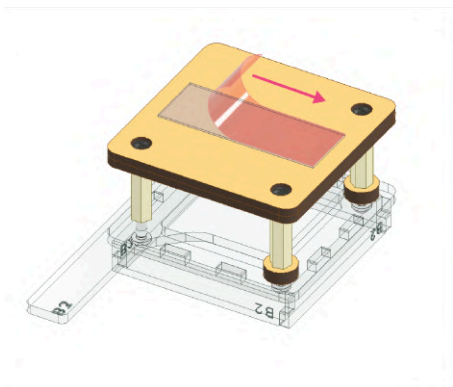
1. Cut and paste pieces of double-sided tape (about 2-5 cm in length) to the bottom of the **Aquarium Assembly** as shown below.



Bottom View:

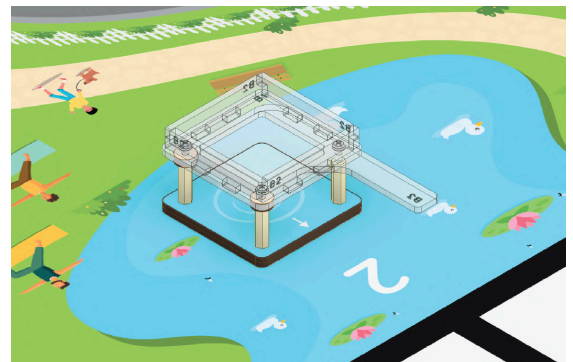
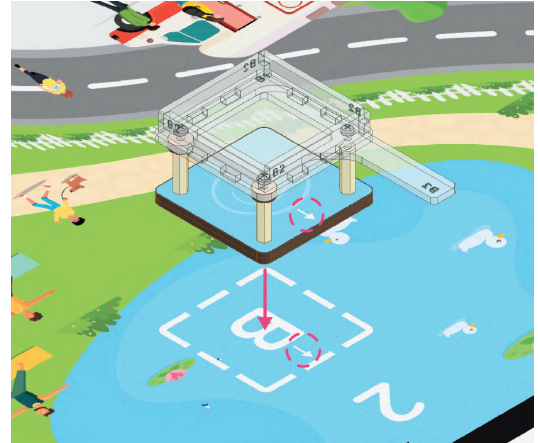


2. Peel off the cover of the double-sided tape.

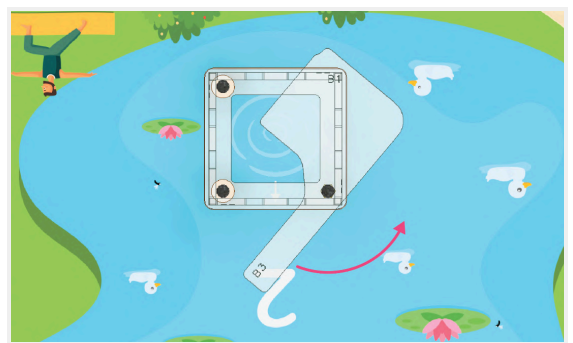


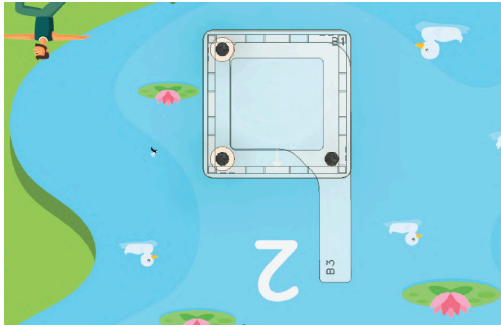
3. Place the **Aquarium Assembly** in its marked area (**B**), aligning it with the white guidelines and the arrow

mark on both the object and the arena.

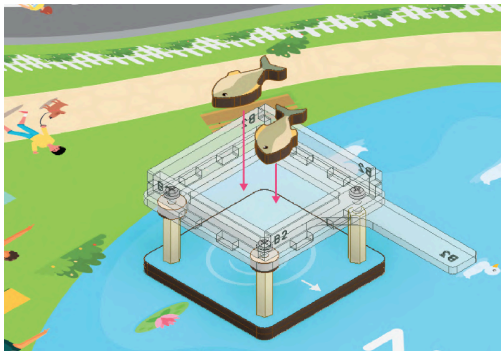


4. Close the **Flash Door**

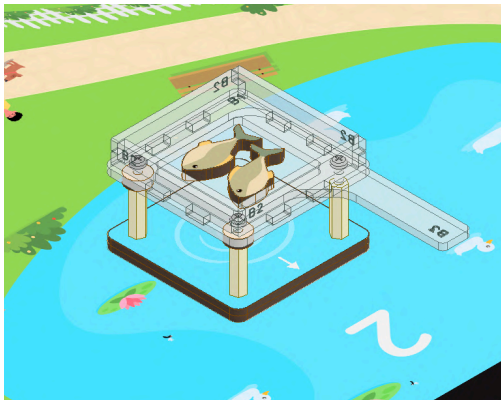




5. Place the **Fishes** inside



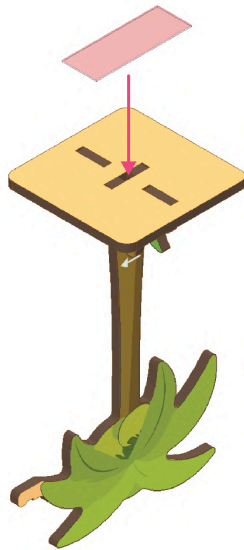
Complete:



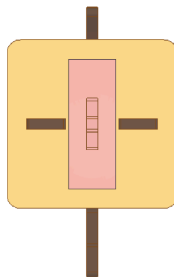
3.3 Object (C)

Coconut Tree Placement

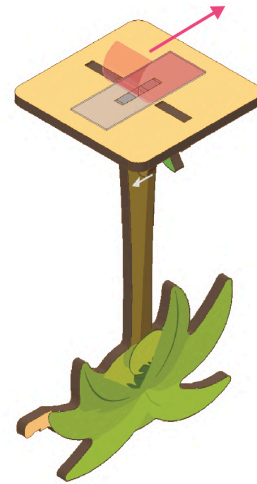
1. Cut and paste pieces of double-sided tape (about 5 cm in length) to the bottom of the **Coconut Tree Assembly** as shown below.



Bottom View:



2. Peel off the cover of the double-sided tape.



3. Place the **Coconut Tree Assembly** in its marked area (C), aligning it with the white guidelines and the arrow mark on both the object and the arena.

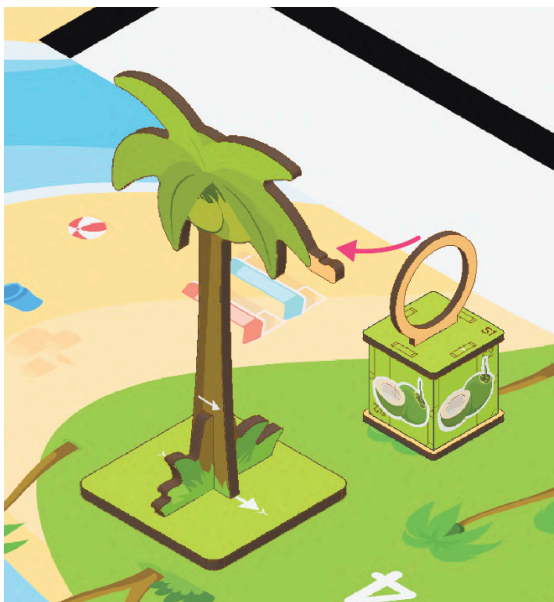




Complete:



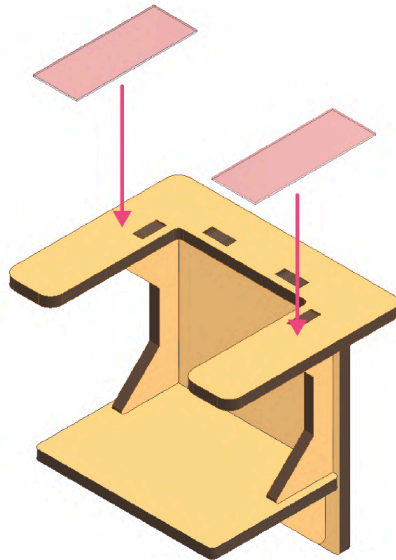
4. Hang the **Coconut Cube** on the **Coconut tree** by securing the ring in the notch as shown below



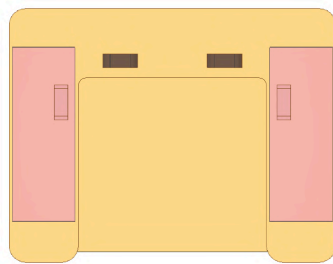
3.4 Object (D)

Pharmacy Placement

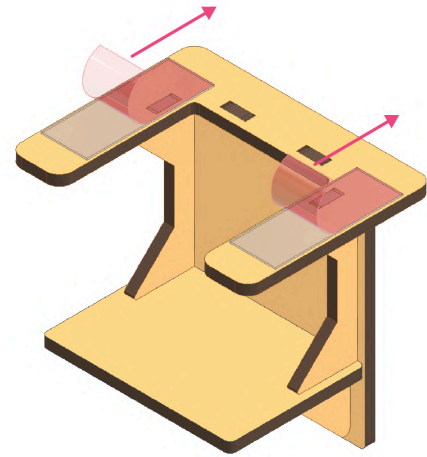
1. Cut and paste pieces of double-sided tape (about 5 cm in length) to the bottom of the **Pharmacy Assembly** as shown below.



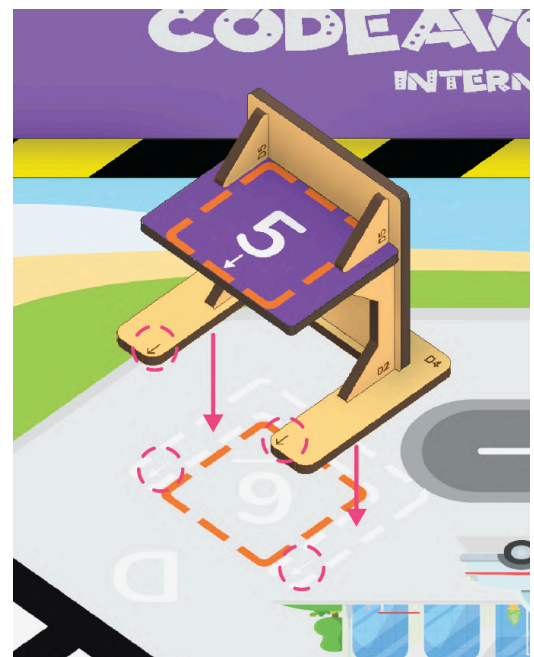
Bottom View:

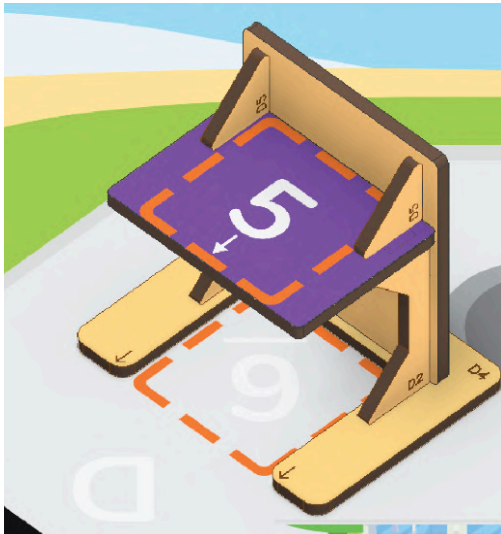


2. Peel off the cover of the double-sided tape.

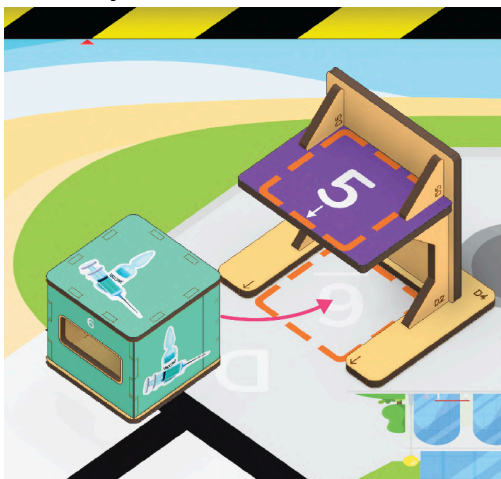


3. Place the **Pharmacy Assembly** in its marked area (**D**), aligning it with the white guidelines and the arrow mark on both the object and the arena.

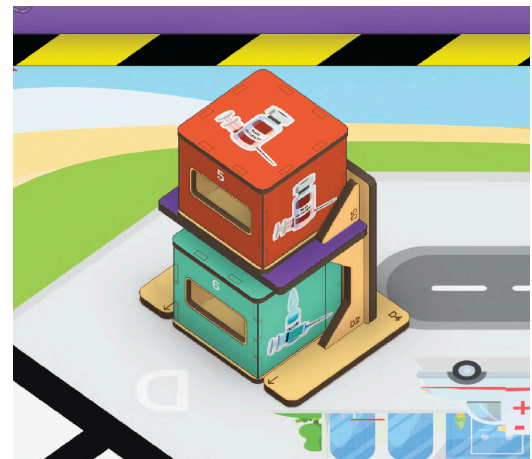




4. Place the **Vaccine (Cube 6)** in the lower section of the **Pharmacy Assembly**



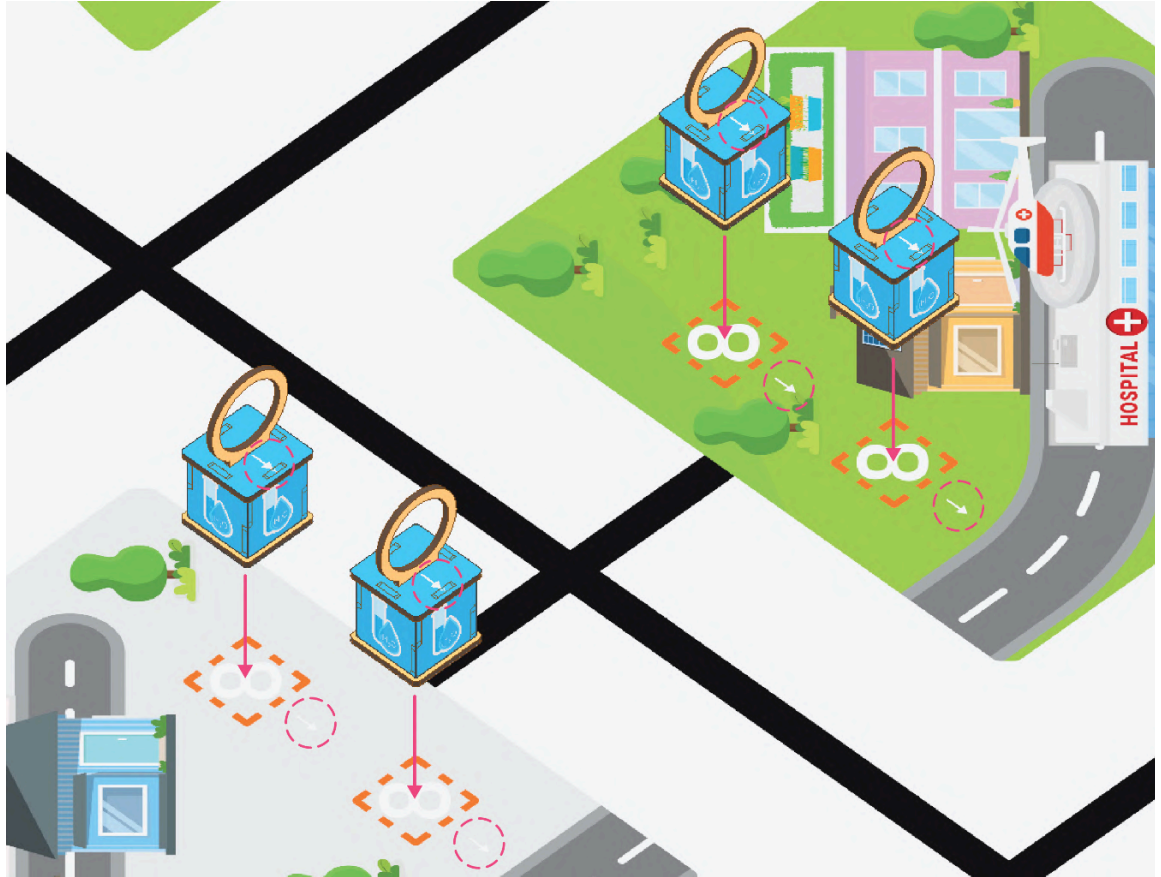
Complete:



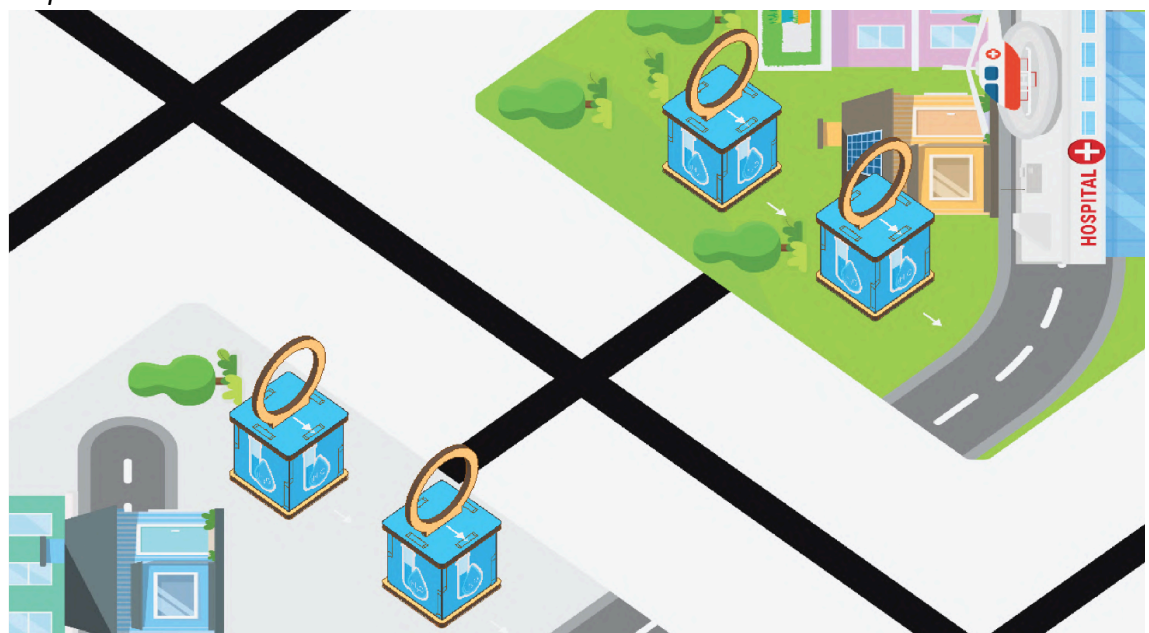
5. Place the **Antivenam (Box 5)** on the top section of the **Pharmacy Assembly**

3.6 Water Sample Cubes Placement

1. Place The Water Sample Cubes at its marked pick-up point aligning it with the orange guidelines and the arrow mark on both the object and the arena.



Complete:



3.5 Cubes' Initial Configurations

All the Cubes will be arranged in the arena according to the provided setup diagrams below.

Note: Before the match, the judge will decide and randomly place any one out of two types of cubes for Challenge 5.



Initial positions of game objects (Elementary)



Initial positions of game objects (Junior/Senior)

3. Camera Setup

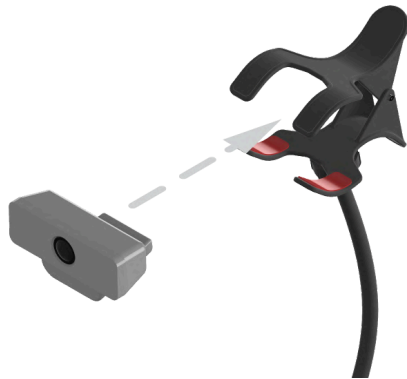
Note: The Arena Object Kit only includes the Camera mount. We recommend buying a webcam that has the following specifications:

Camera connection type: Wired, USB 2.0

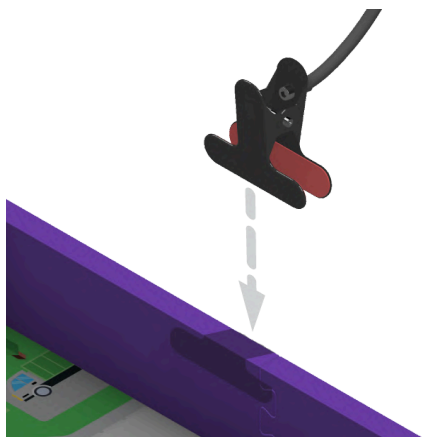
Camera FOV: DFOV 90°

Capture Resolution: FHD (1920 x 1080)

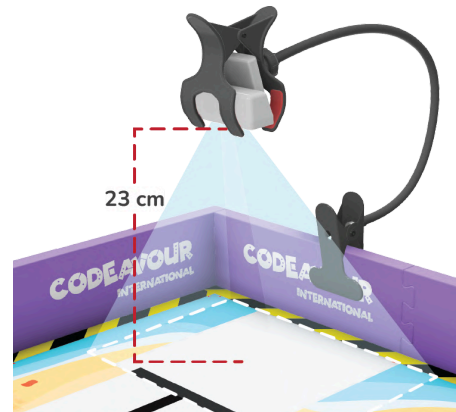
1. Clamp the camera to the camera mount and secure the cables using cable ties.



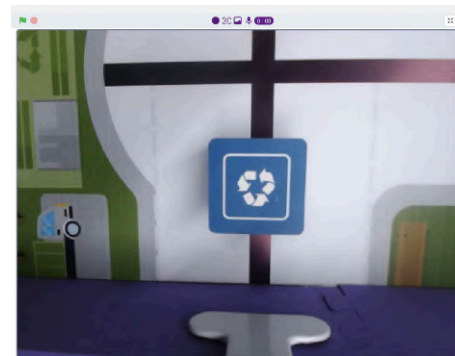
2. Install a camera mount on the arena wall near the recognition area.



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



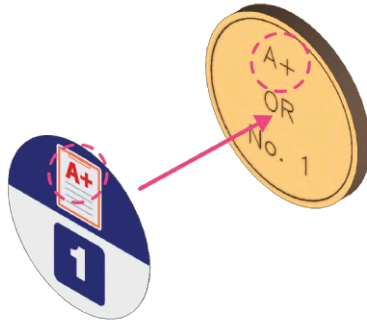
Camera Position



Camera Field of View in Pictoblox

4. Decision Coin Assembly

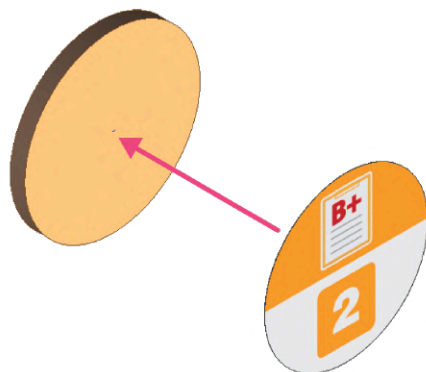
1. Apply the **Decision Coin Front Sticker (A+)** from the sticker sheet **B4** on **Front (A+)** sides of the **Decision Coin** as shown below.



Assembled View:



2. Apply the **Decision Coin Back Sticker (B+)** from the sticker sheet **B4** on the other sides of the **Decision Coin** as shown below.



Assembled View:



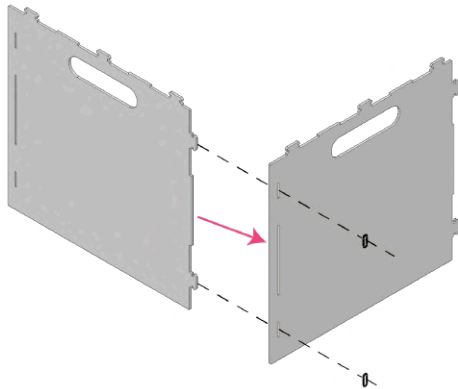
Complete:



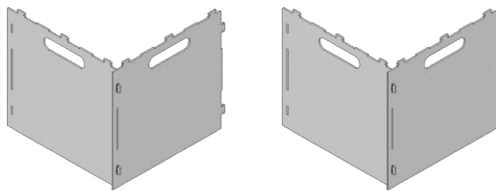
5. Bot Dimension Verification Box Assembly

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

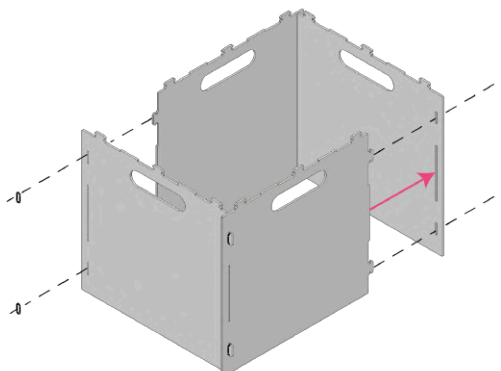
1. Attach two **Side Plates** with a couple of **O-rings**.



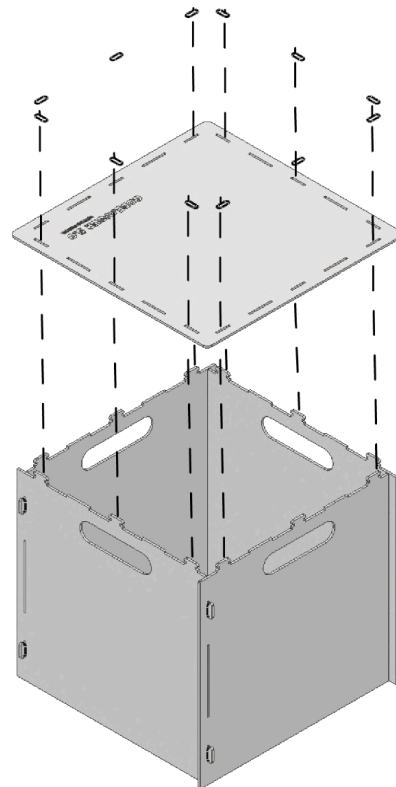
2. Similarly, assemble another two **Side Plates** and make two identical **Side Plate Assemblies**.



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



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



Complete:



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