

# Robot ZONE [01]

Prehistoric  
Instinct

6-10 years old

Educational challenge

## Context

After crossing what appeared to be an ocean with your dredging skills in season 1 of Planet Z, you can finally set foot on dry land.

The location you've landed in looks tropical, and the forest is covered with flowering plants, the dominant vegetation of the Cretaceous period.

It's only when you come across a reptile the size of a building that you realize that, on this planet that bears a striking resemblance to Earth, ...

... the meteorite never hit!

This challenge is similar to the Jurassic Instinct challenge, but here Recruits can manipulate the robot while it's in a base zone, either the reserve zone, the beach zone or the start zone.

## Robot Description

Robots taking part in the challenge must comply with the following constraints:

1. The robot must completely enter the starting area, which includes the red border, so inside a 25cm x 25cm square.
2. Only one controller (EV3 brick or Spike Prime, etc.)

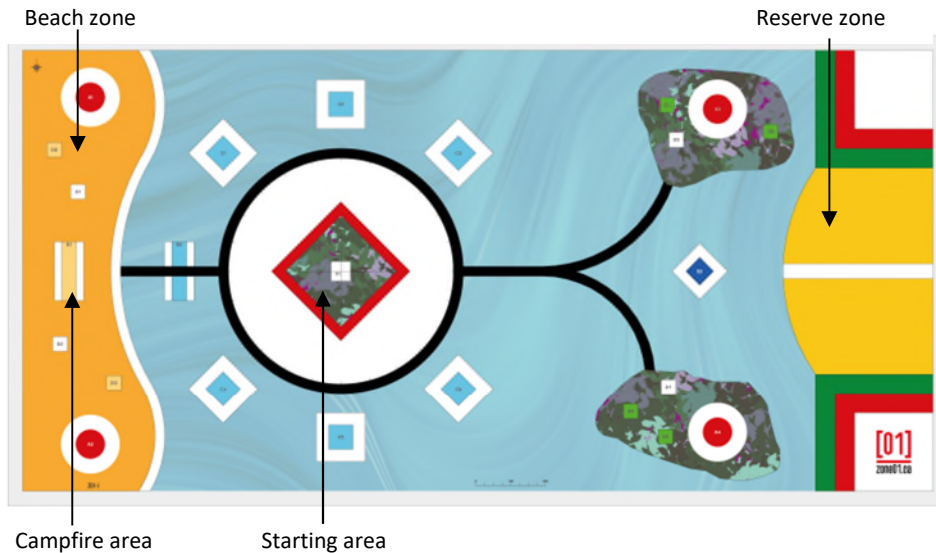
## Description of the playing field

### Surface used: Z01-J Mat

The mat is highly recommended for practicing the challenge since the mat's colors and lines define the precise locations of the objects.

The mat is available at the [Zone01 shop](#).

## View of the mat in 2 dimensions

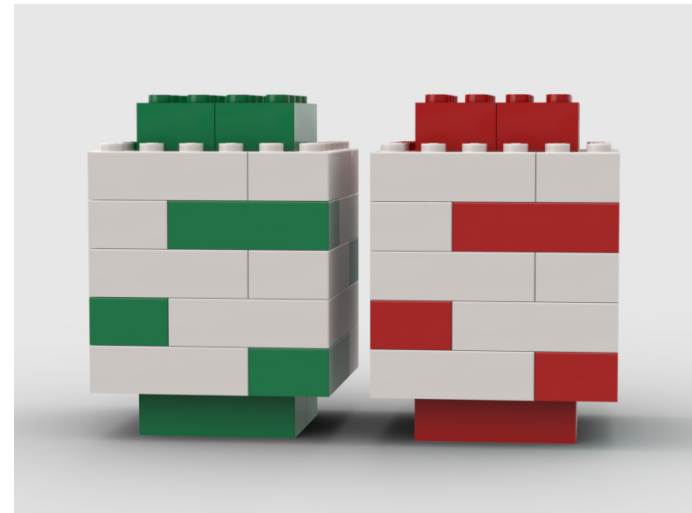


## Description des accessoires

### Intact dinosaur eggs

There are two intact dinosaur eggs. The white and green egg is a Tricornosaurus egg, a herbivorous dinosaur. The white and red egg is a Z-Rex egg, a carnivorous and very dangerous dinosaur.

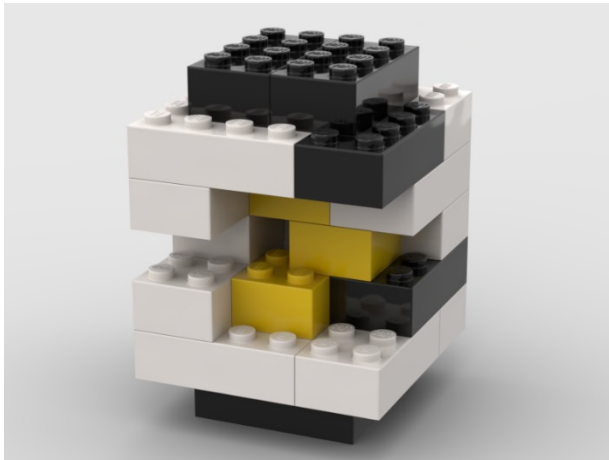
The eggs are made of 2x4 LEGO bricks.



## The broken dinosaur egg

The broken dinosaur egg is a Megasaurus egg that has already hatched. Inside the egg, however, there's still a nutrient-rich substance that's good to eat when cooked.

The broken egg is made of 2x4 and 2x2 LEGO bricks.



## Camera

You've brought a camera and want to capture beautiful images of this new environment.

The camera is placed on a tripod and allows you to film dinosaur activity.

It consists of various parts\* (see assembly instructions).

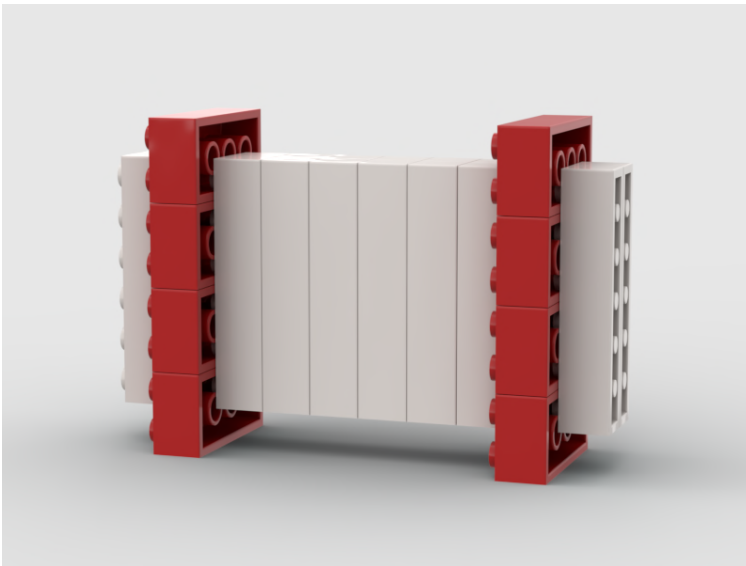


\* This camera will be used at the competition. However, should any parts be missing, a second version of the camera is available in the assembly instructions section.

## The barrier

You've built a barrier to protect yourself from dangerous dinosaurs.

The barrier is made of LEGO bricks 2x4 and 1x6.



## The aquarines

The aquarine is a marine plant that grows at different heights and produces aquatic kesos. There are low and high aquarines.

The aquarine base is made of LEGO bricks 1x6, 2x2 and 2x4. The central rod of the low aquarine measures 16 beams high from the ground, and that of the high aquarine 24. The platform is made up of various LEGO parts\* (see assembly instructions).

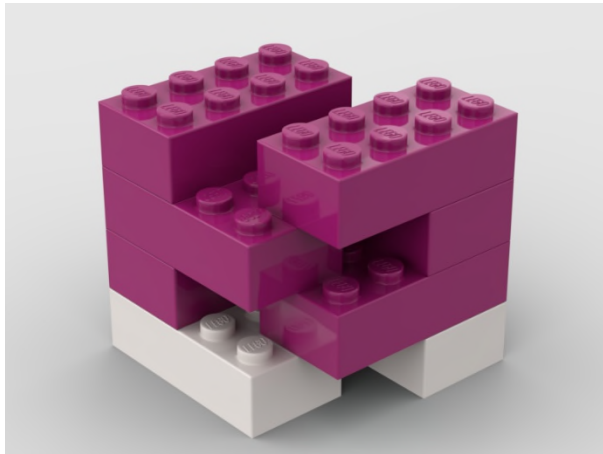


\* This platform will be used at the competition. However, it can be built with other equivalent parts if required.

## The aquatic keso

The aquatic keso is a food that grows on aquarines and is a good source of nourishment.

The keso is made from LEGO 2x4\* bricks.

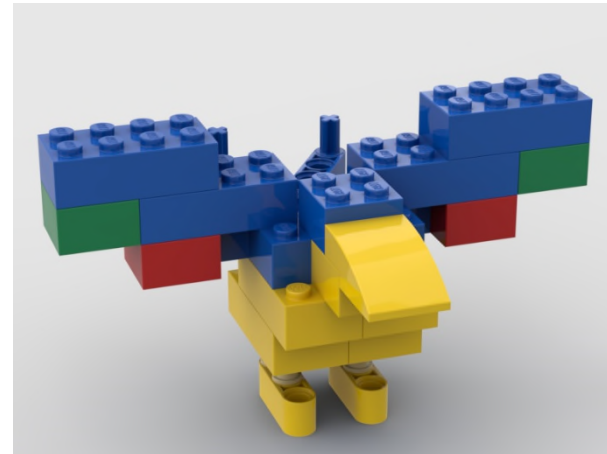


\* the keso's color is not important.

## Diego the bird

Diego is a bird who started following you on your adventure. You soon became good friends. He likes to land on high points to watch you.

Diego the bird is made up of LEGO 2x4 and 2x2 bricks, plus other EV3 and Spike\* parts.

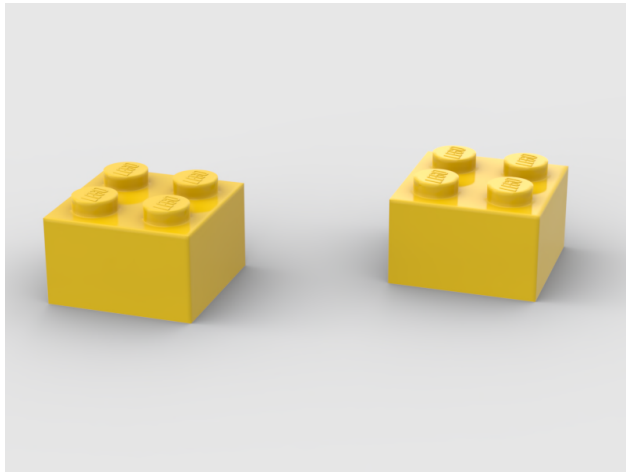


\* In the event of missing parts, Diego can be built differently since it's mainly used for decorative purposes in the challenge.

## Bird seeds

You've found some seeds on the ground that Diego the bird seems to love.

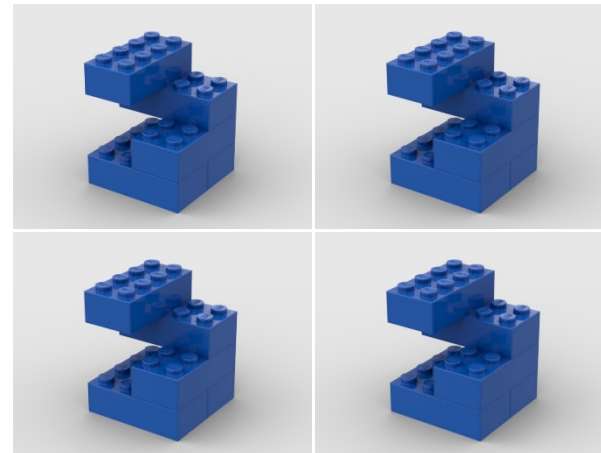
These seeds are represented by yellow LEGO 2x2 blocks.



## The pompons

The pompons are a type of vegetation that grows on Planet Z. They must not be disturbed, as this could disrupt the ecosystem. There are 4 blue ones and one red one on the game surface.

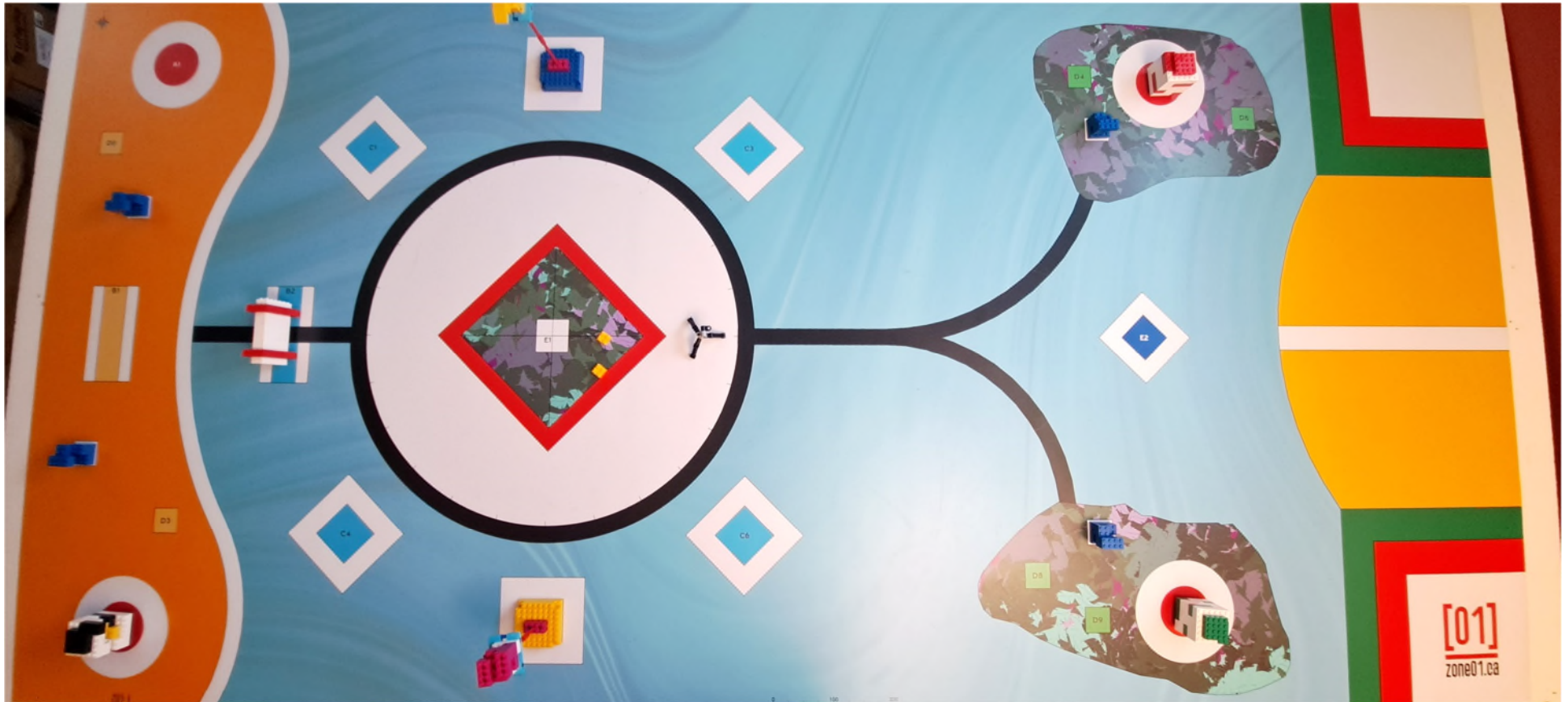
They are made of 2x4 LEGO bricks.



## Positioning of the Accessories

- The camera is placed by the team anywhere within the white circle of the central island, thus excluding the starting area and the black border.
- The barrier is placed in the center of the B2 rectangle.
- The aquatic keso is placed above the low aquarine.
- Diego the bird is placed above the high aquarine.
- The two bird seeds are placed by the team anywhere in the starting area (they can be on the robot).
- The pompons are placed in squares D1, D2, D5 and D7.
- The Tricornosaurus egg (green) is placed in the center of the A4 circle, and the Z-Rex egg (red) is placed in the center of the A3 circle.
- The broken egg is placed in the center of the A2 circle. The broken egg's opening always faces the center.
- The low aquarine is placed in square C2 and the high aquarine in square C5.





Positioning of the accessories

## Detailed description of the challenge

The team installs the robot and bird seed completely inside the square in the center of the central island, including the red border.

The team places the camera in the white circle.

At the judge's signal, the team presses the button on the brick and the robot begins its missions in any order.

### IMPORTANT

- The team can only manipulate the robot when it is partially within a base zone (reserve, beach or start zone). The white line is included for the reserve and beach zones.
- As soon as the robot touches a base zone, the team can move it completely within any base zone.
- The team can also manipulate the game accessories when they are in a base zone, but only within that same zone.
- The team can run several programs, from a computer or tablet, during the challenge.

## Missions:

1. Feed Diego by placing bird seed in the white square around the tall aquarine.
2. Place the camera completely on the island where the Tricornosaurus egg is located.
3. Place the barrier next to the Z-Rex egg so that the two red stripes touch the white circle.
4. Bring the broken egg completely to the campfire area in B1 to cook.
5. Knock off the aquatic keso onto the playing surface.
6. Park robot partially on red circle A1.

The challenge is completed when a team member says "Stop", when the time runs out (**max 2 minutes**) or **if an intact egg is moved completely out of its red circle.**

## Scoring

Missions	Max points
Put the seeds completely in the white square where Diego is. (7)	14
Bring your camera fully upright on Tricornosaurus Island	12
Position the barrier so that its 2 red stripes touch the white circle on the Z-Rex Island. (11)	22
Bring the broken egg completely to the campfire area	16
<i>Bring partially broken egg to campfire area</i>	8
Knock off the aquatic keso onto the playing surface.	12
Park the robot partially within the A1 red circle (projection)	7

Bonus points	Max points
Do not move or damage the blue pompons (3)	12

Penalties	Max points
Damaging, dropping, or moving the aquarine out of its white square (-4)	-8
Hurt Diego	-15

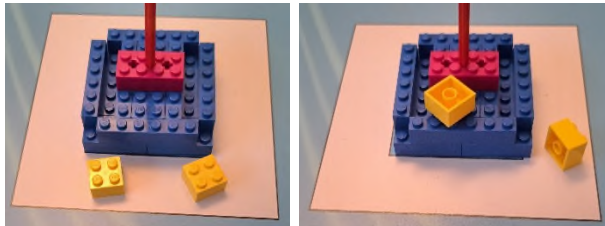
At the competition	Max points
Solve the surprise rule	20

<b>Total max points</b>	<b>115</b>
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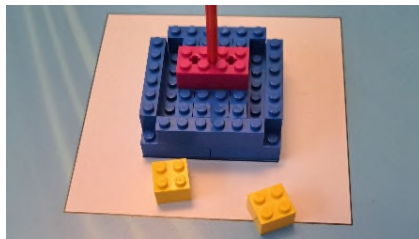
## Score Interpretation

Seeds in Diego's white square

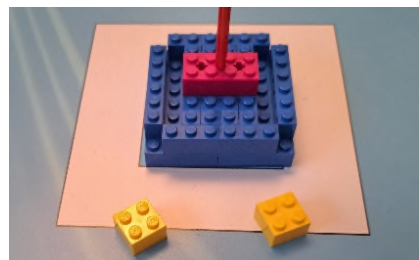
2 seeds = 14 points



1 seed = 7 points



No seeds = 0 points



Camera on the island

Completely on the island = 12 points



Camera fell, is damaged or partially on the island = 0 points

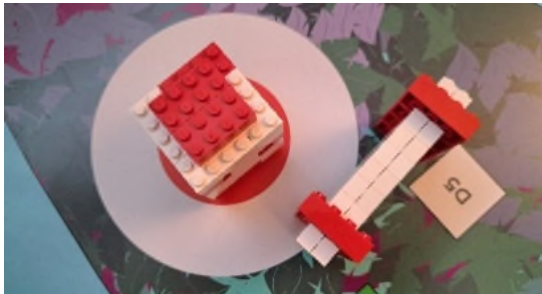


## Placement of the barrier

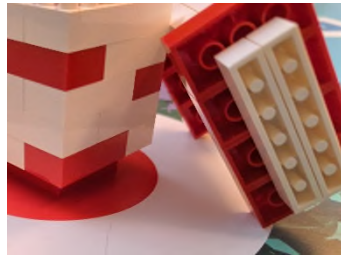
2 red stripes partially inside the white circle = 22 points



1 red stripe partially inside the white circle = 11 points

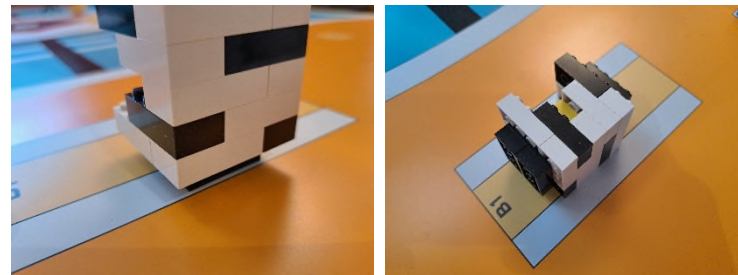


Barrier fell, is sloping or outside the white circle = 0 points

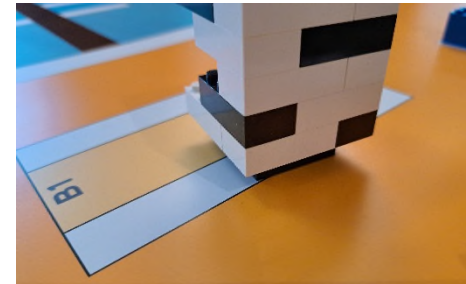


## Broken egg in campfire area

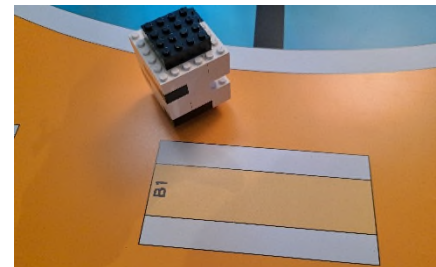
Egg completely in the campfire area = 16 points



Egg partially in the campfire area = 8 points



Egg completely out of the campfire area = 0 points

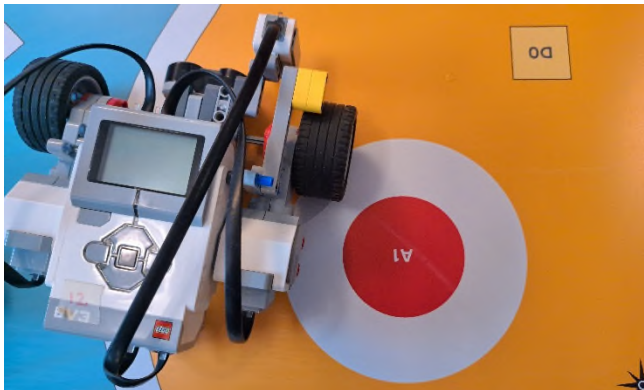


## Finish area

The robot is partially in the finish area = 7 points



Robot not in the finish area = 0 points

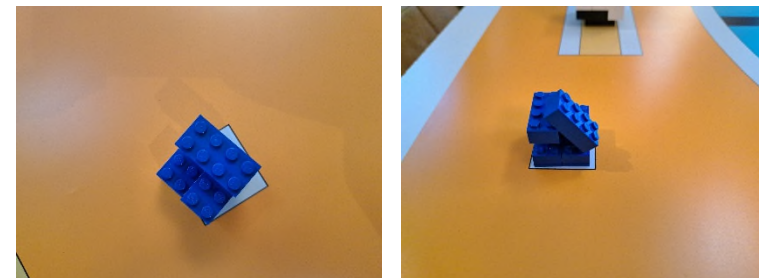


## Blue pompons moved

Pompon completely in its square = 3 points

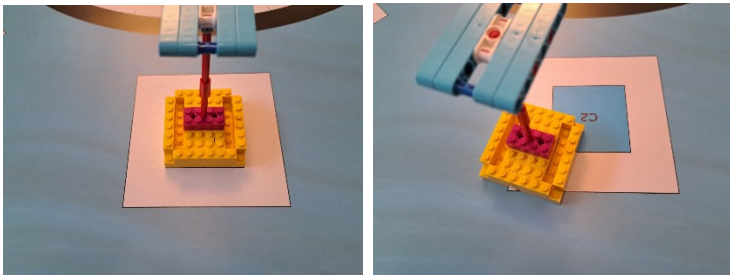


Pompon partially inside its square or damaged = 0 points

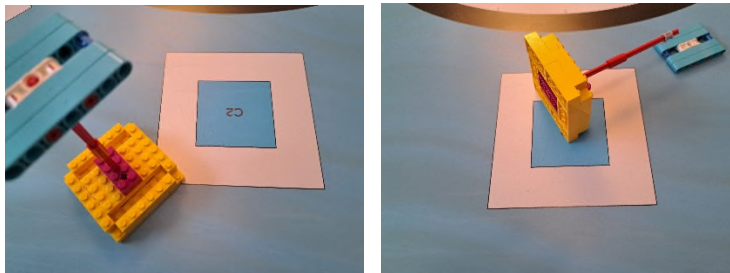


## Aquarine moved

Aquarine partially in its blue square = OK

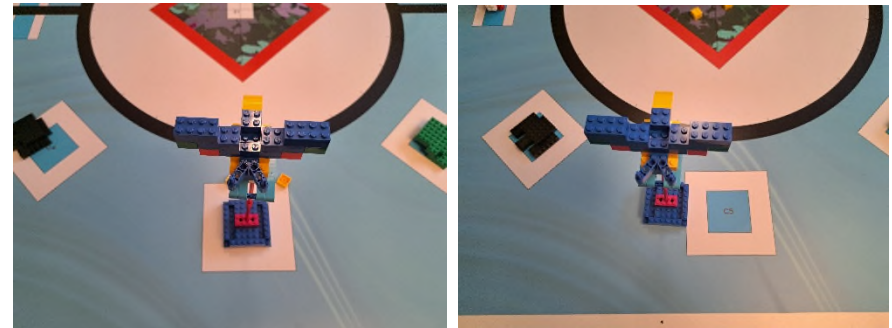


Out of the blue square, damaged or fell = -4 points

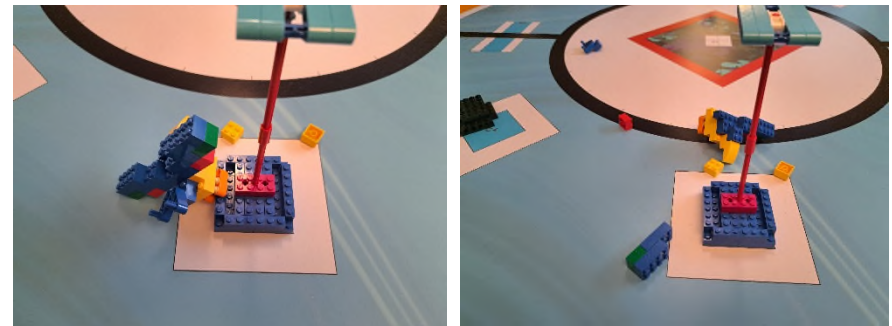


## Diego injured

Diego is on the aquarine and intact = OK



Diego fell or is injured = -7 points



Moved intact egg

Egg standing and partially inside its red circle = OK



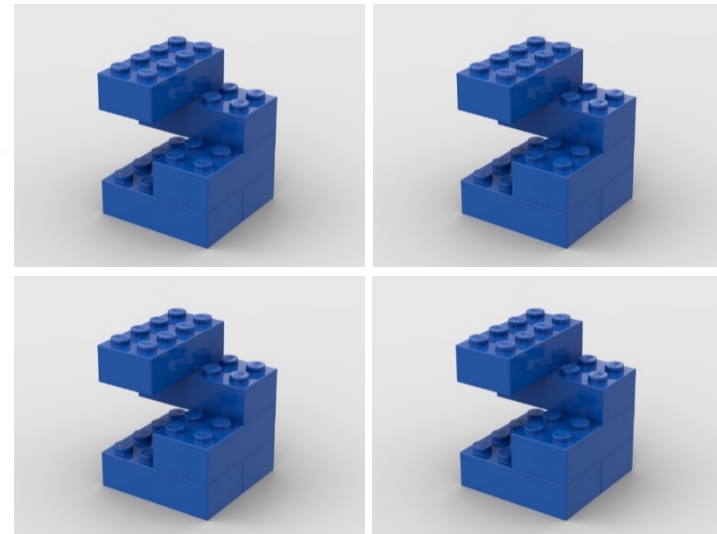
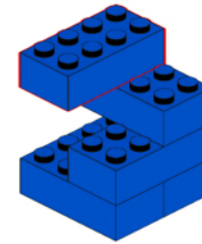
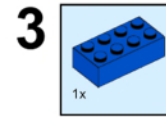
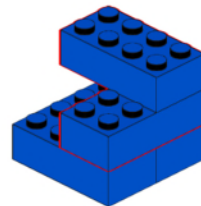
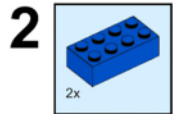
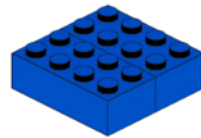
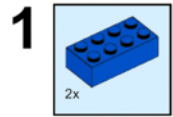
Egg is completely outside its red circle = not OK



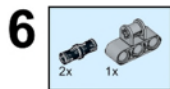
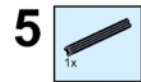
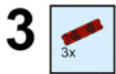
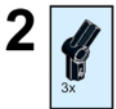
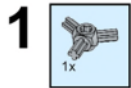


## Building Instructions

### Pompons (x4)

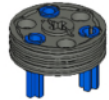
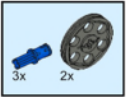


## Camera



## (Camera (aternative))

1



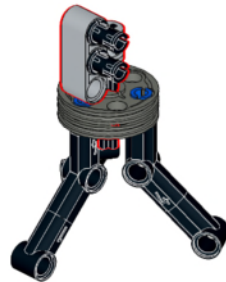
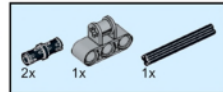
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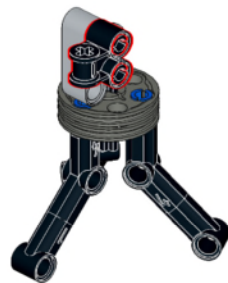
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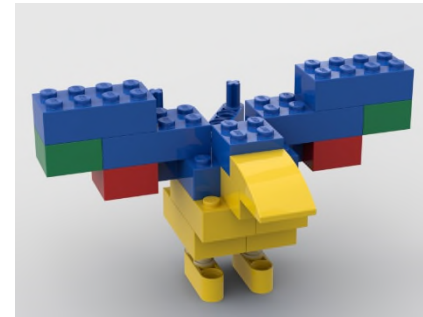
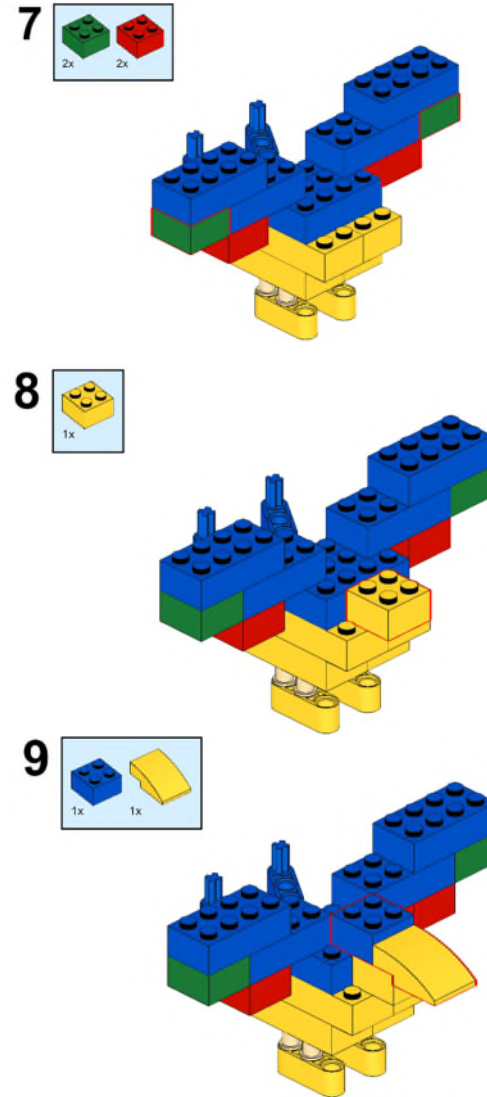
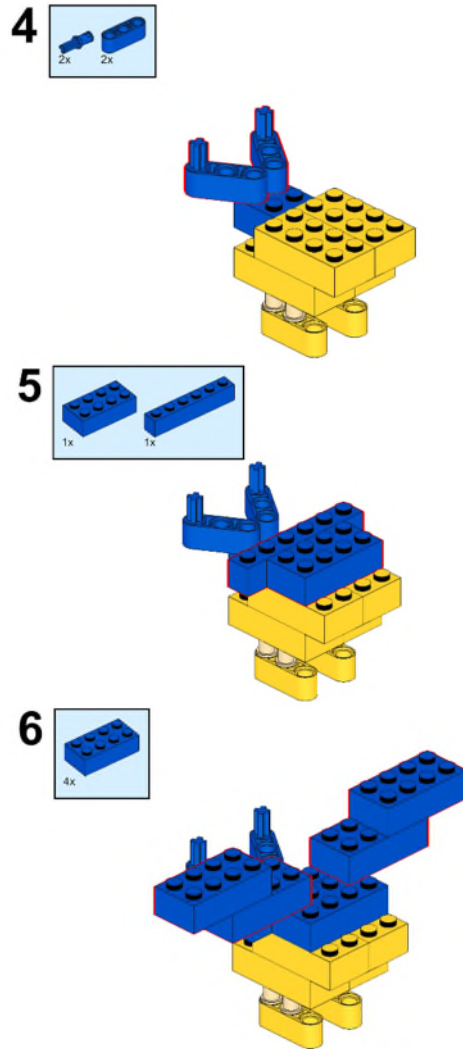
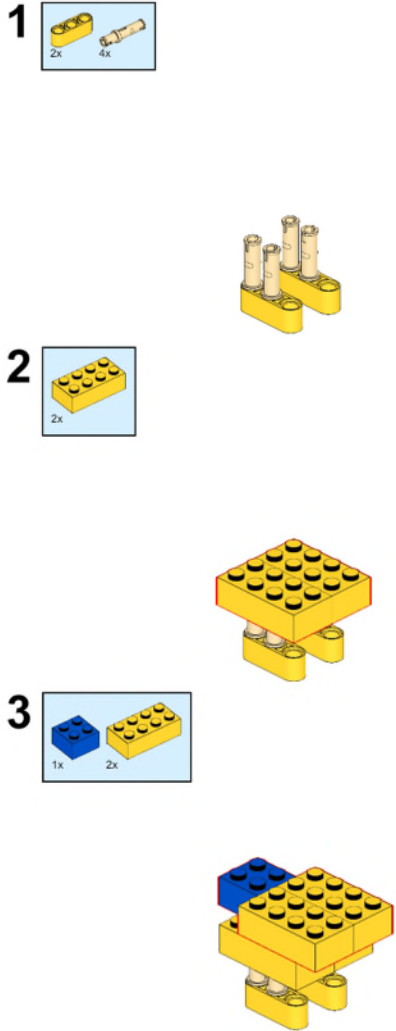
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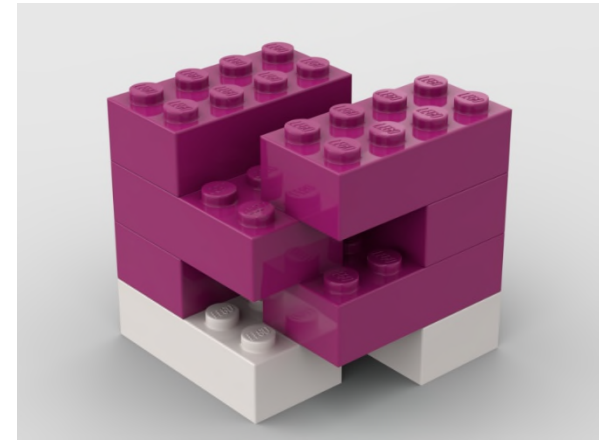
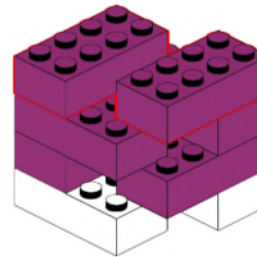
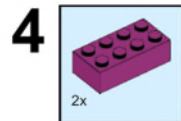
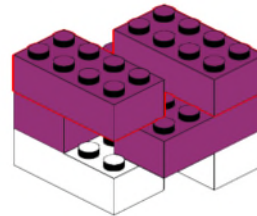
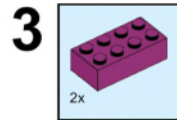
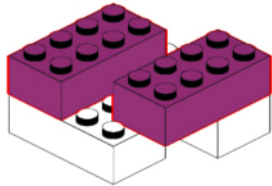
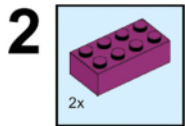
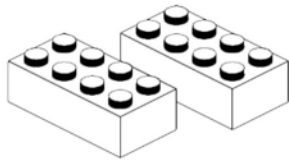
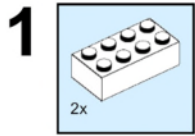
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## Diego

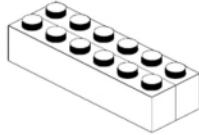
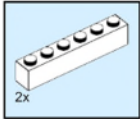


## Aquatic keso

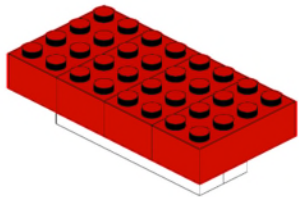
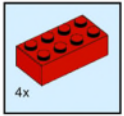


## Barrier

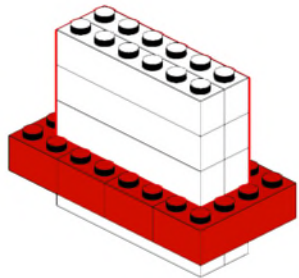
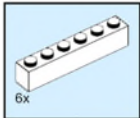
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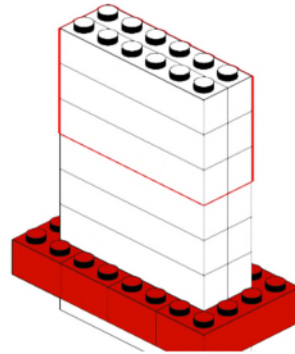
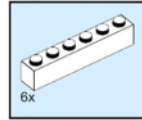
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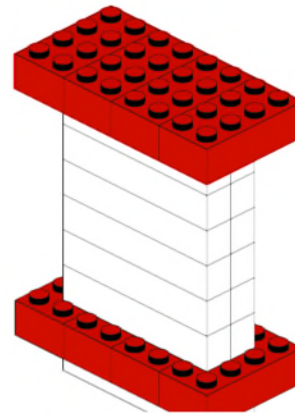
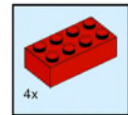
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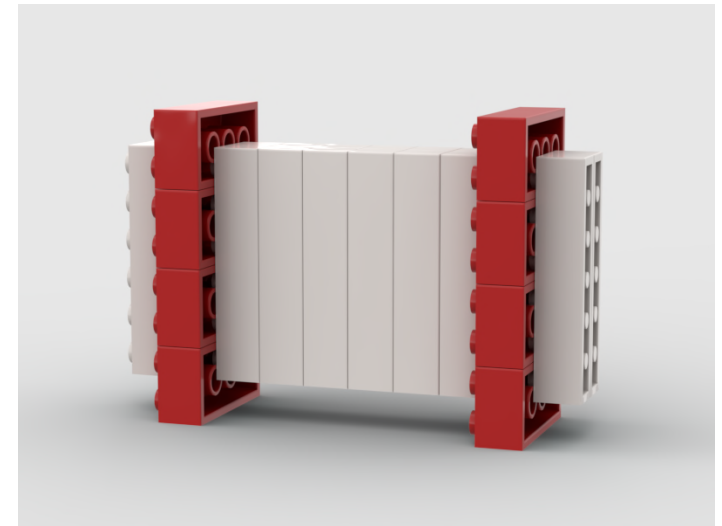
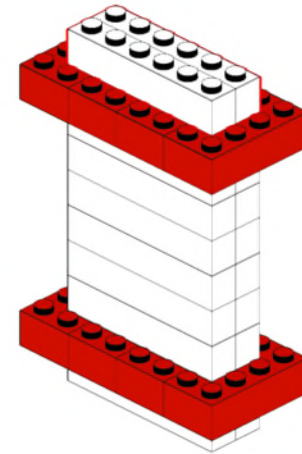
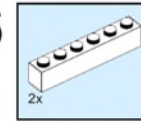
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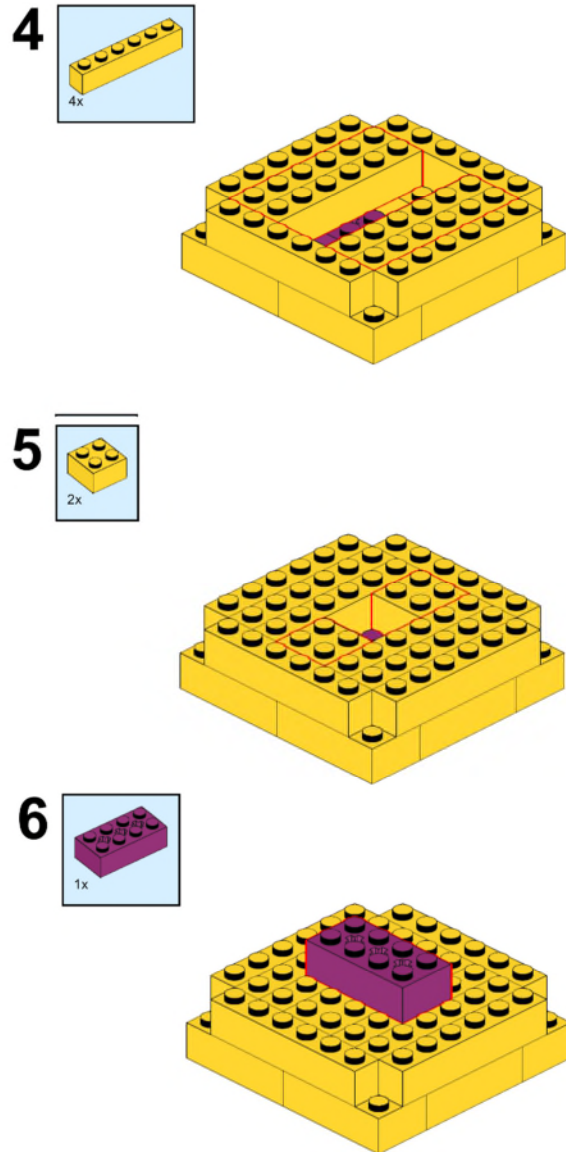
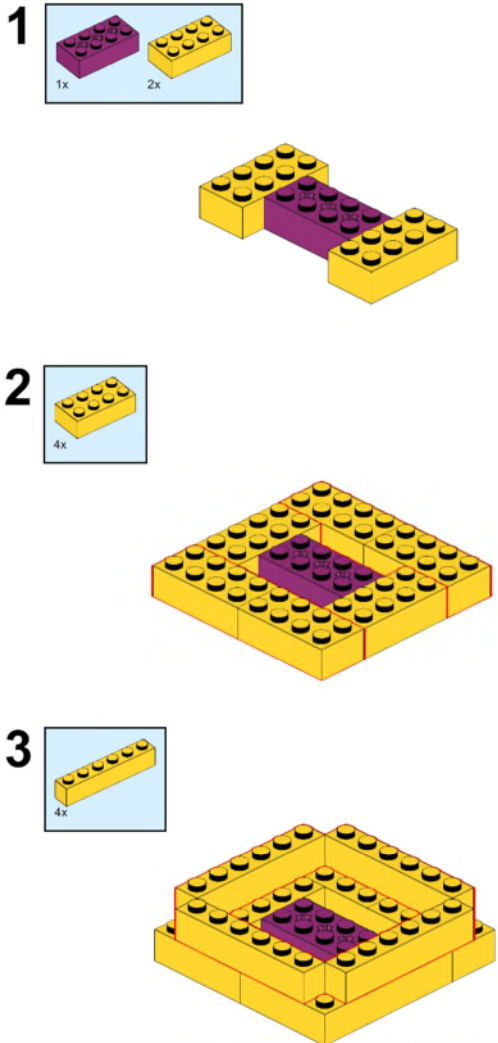
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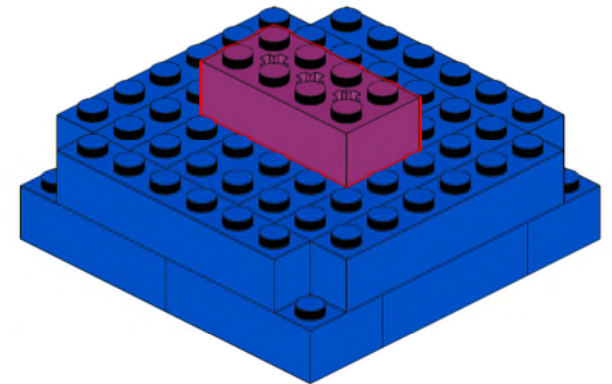
6



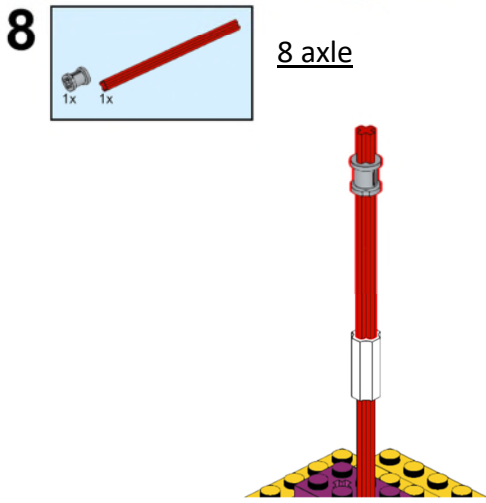
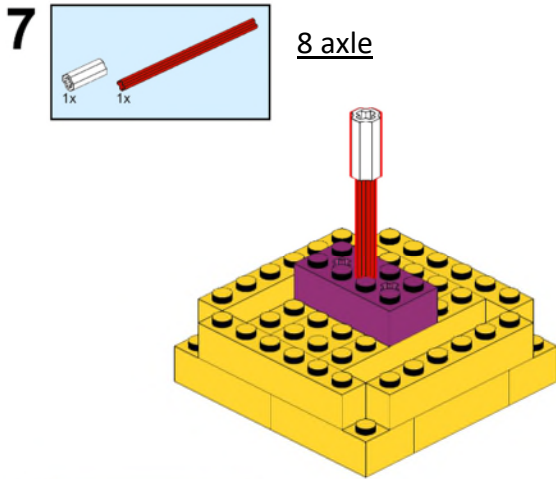
## Aquarines



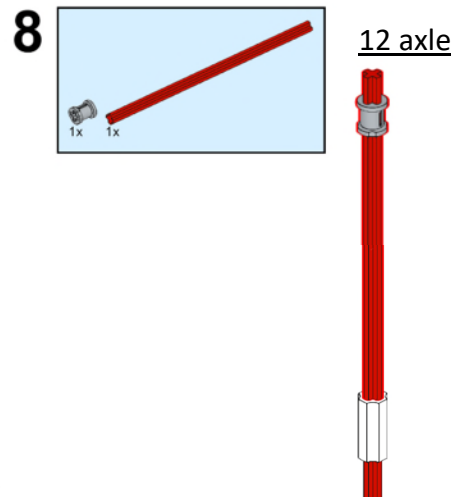
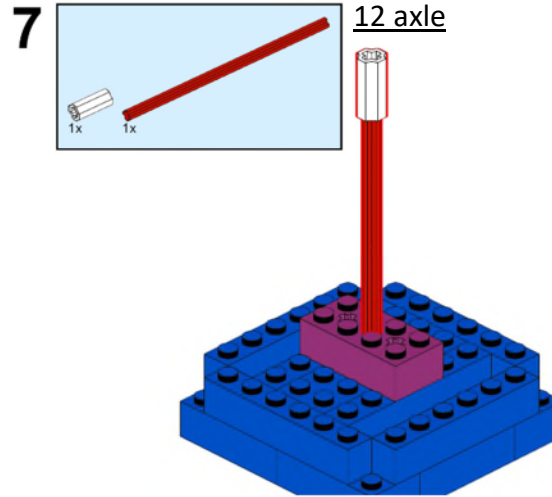
Repeat steps 1 through 6 with blue bricks



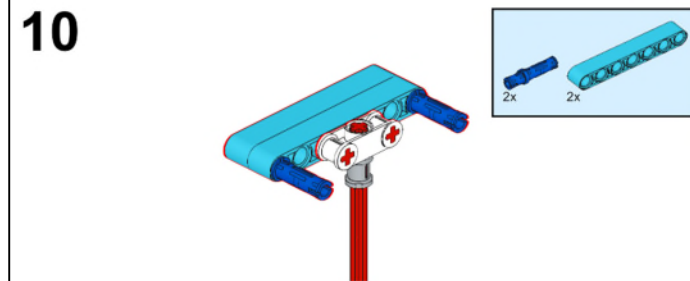
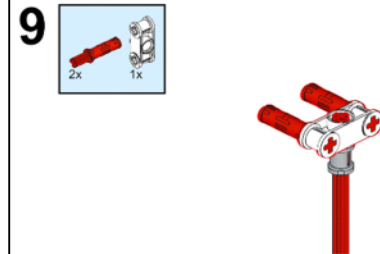
## For the small aquarine



## For the tall aquarine

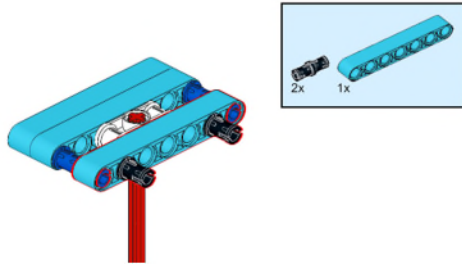


## Platform (x2)

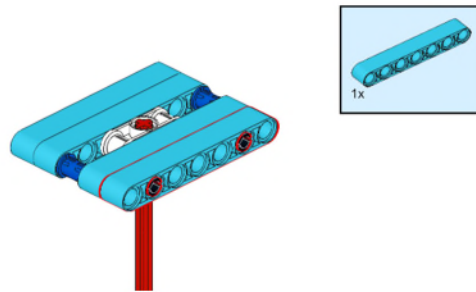




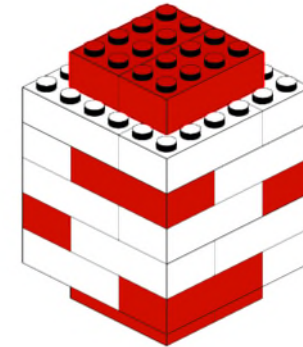
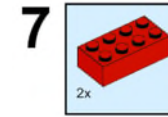
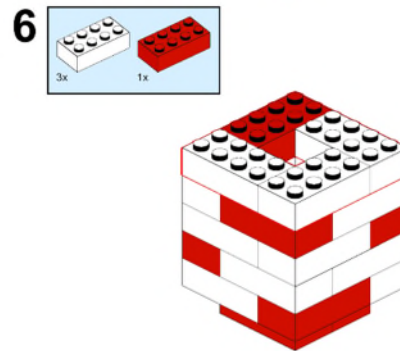
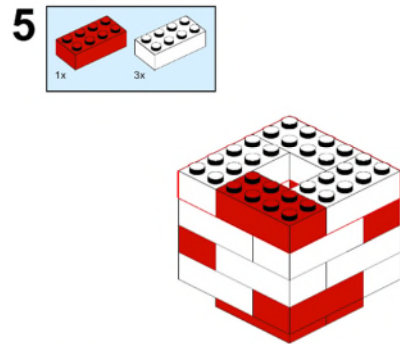
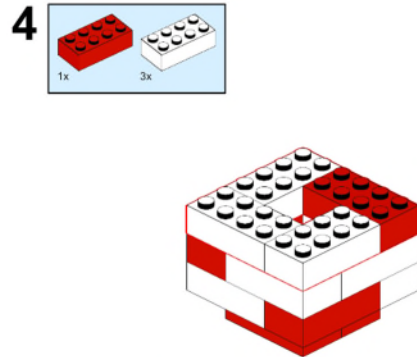
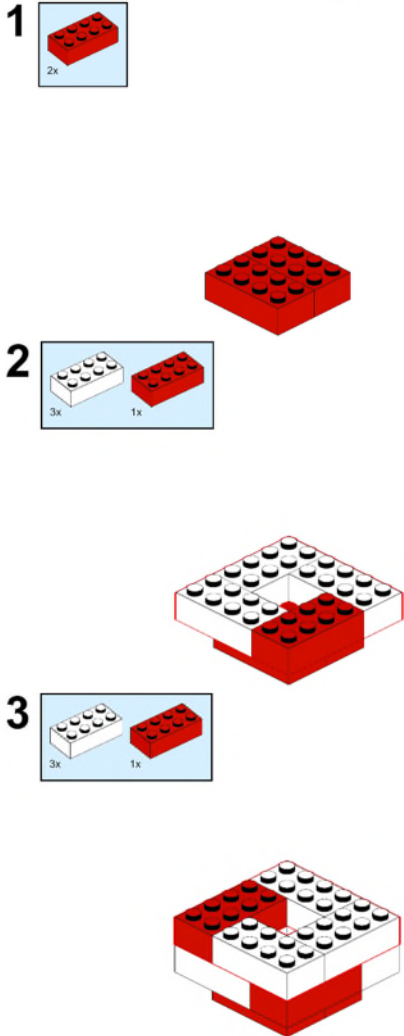
11



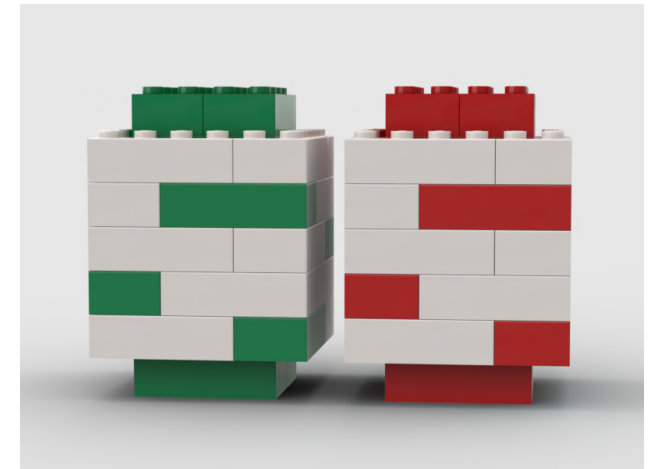
12



## Intact eggs



Repeat steps 1 through 7 with green bricks instead of red bricks.



## Broken egg

