

Robot ZONE [01]

A close-up photograph of a red and black beetle, likely a ladybug, resting on a pink flower. The beetle has a bright orange-red body with several black spots and a black triangular pattern on its back. The flower is in sharp focus, showing its delicate petals and a yellow center. The background is blurred, showing more of the flower and some green foliage.

POLLINATOR

Creative
Challenge

Image by [Dear Sunflower](#)

Context

The auroria, a large flower with varied colors, struggles to reproduce. A violent storm has decimated the colony of polliflores, the unique pollinator bird of the auroria, and only a few specimens have survived.

To temporarily address the lack of polliflores, you are asked to build a robot that can assist in the pollination of the auroria until the colony can recover.

Robot Description

The robots participating in the challenge must comply with the following constraints:

1. The robot must start completely within the starting area, marked by a wide black line.
2. The robot must not exceed 40 cm in height at the start.
3. Only one controller (EV3, Spike Prime, etc.) is allowed.
4. The maximum weight is 1.5 kg.

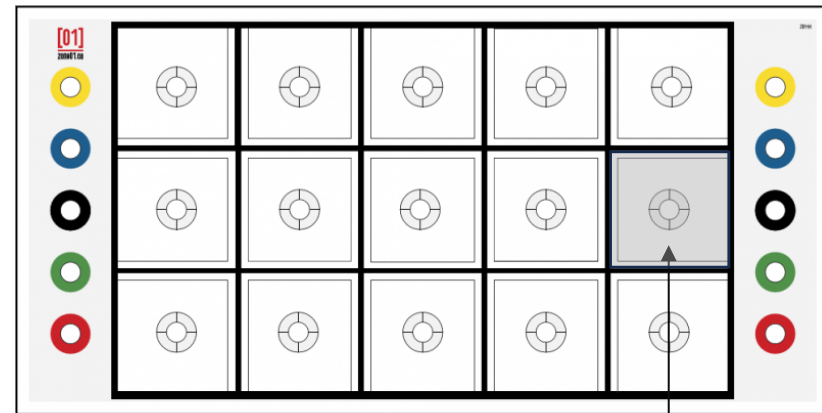
Description of the Playing Field

Surface used: Z01-H Mat

The mat is highly recommended for this challenge, as the mat lines and circles define the precise locations of the objects and zones.

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

View of the Mat in 2D



Starting / Finish Area

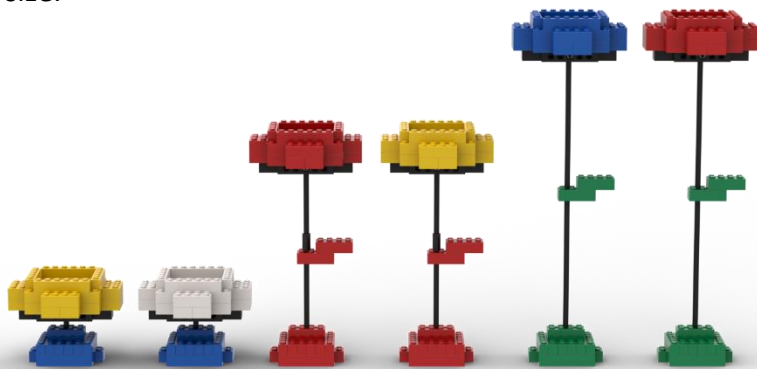
Accessories Description

Auroria

The auroria is a plant whose base changes color according to its size. The blue-based auroria is short, the red-based auroria is medium-sized, and the green-based auroria is tall. The color of the flowers and leaves is not important.

For the 10–12 years old category, there will be 4 flowers with a red base, so of medium height, and 2 flowers with a green base, so tall.

For the 13-19 years old category, there are two flowers of each size.



Pollen

Your robot is equipped with 8 red pollen cubes that will allow it to pollinate the flowers.



At the national final, you will equip your robot with a total of 8 pollen cubes and choose the color of each cube (red or green).



Positioning of the Accessories

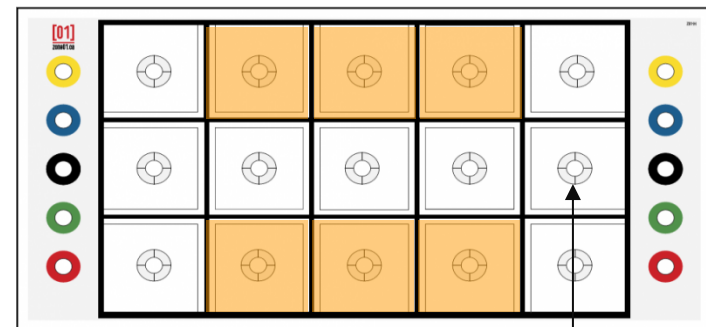
The 6 aurorias are placed at the center of the circles in the highlighted squares in the image below.

The longer side of the base is oriented in the direction of the length of the game mat. The leaf on the stem points towards the starting area.

The flowers are positioned randomly in the 6 possible locations.

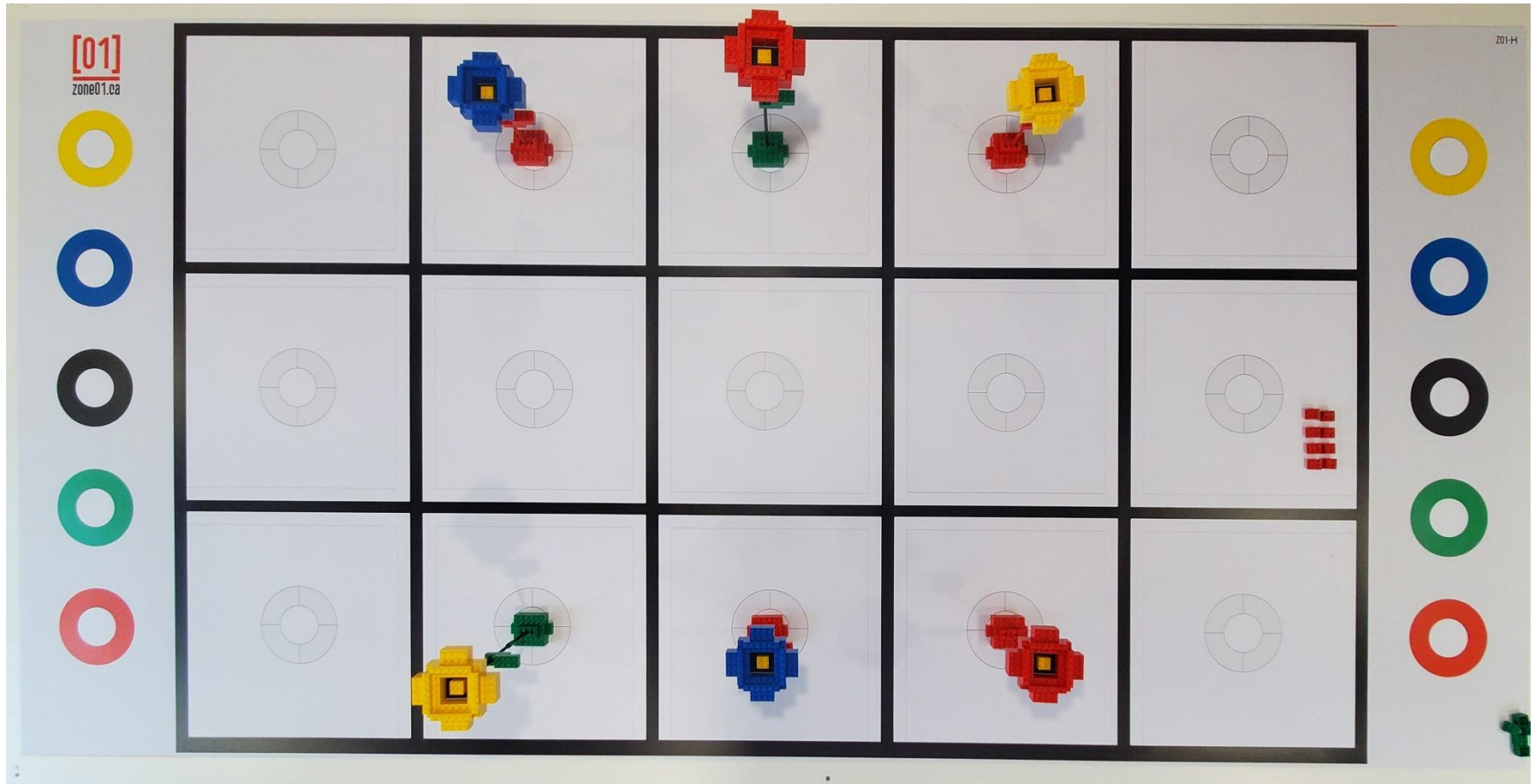
- In the regionals, the random positioning will be decided on the morning of the competition for the day.
- At the national final, the random positioning will be done for each attempt, once the robot is ready.

Random positioning in the orange areas

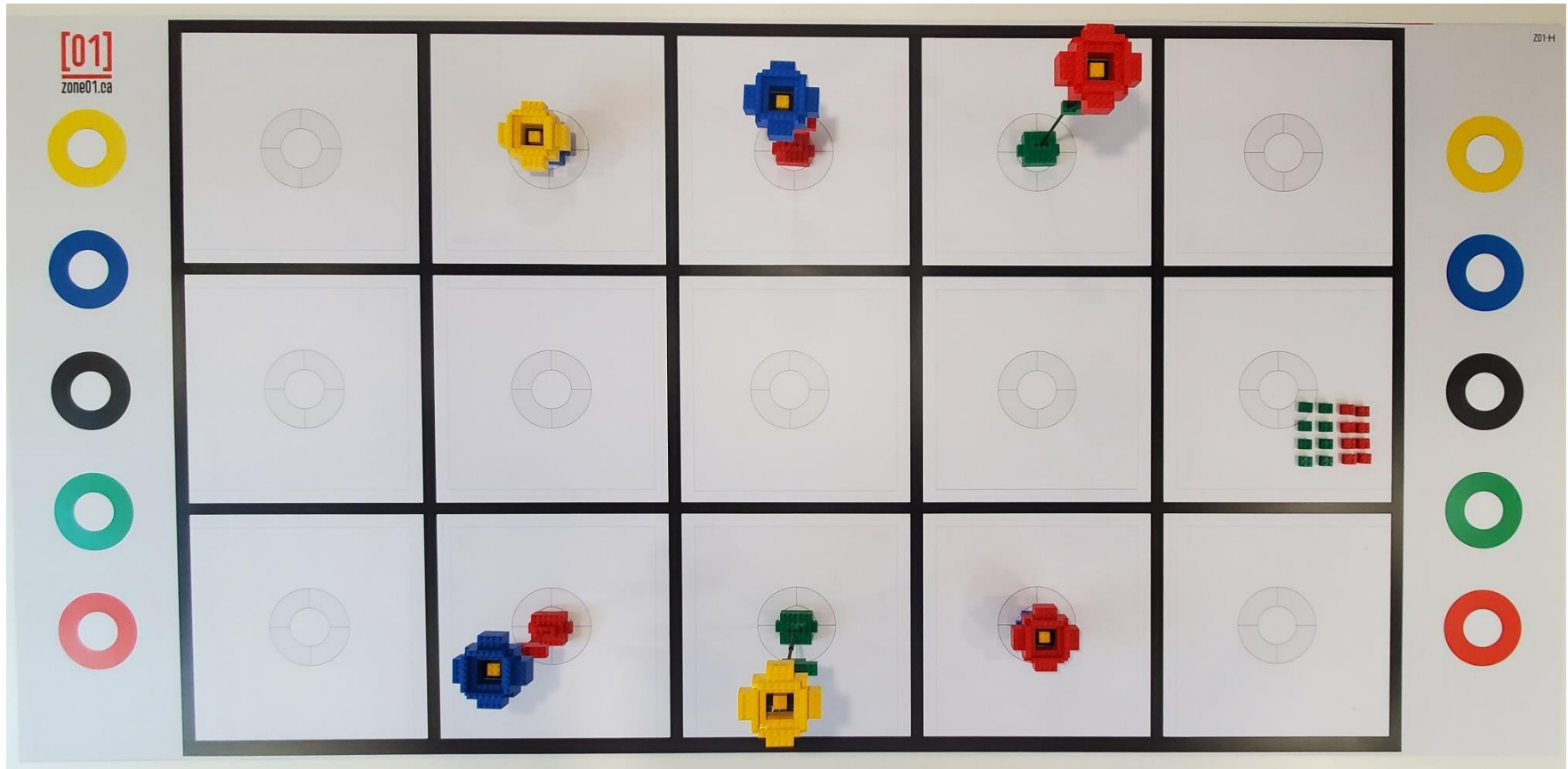


Starting / Final Area

Example of Positioning, 10-12 Years Old Category



Example of Positioning, 13-19 Years Old Category



Detailed Description of the Challenge

Start

The team fully installs the robot in the starting area and loads the pollen cubes.

At the national final, the judge then randomly places the aurorias in the 6 possible positions.

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

The challenge ends if a team says STOP, touches the robot, or when the maximum time of 2 minutes has elapsed.

Missions

1. Place a pollen cube on each auroria. The pollen is considered in the flower if it touches the center of the flower, represented by the 2X2 yellow brick. If 2 pollens are placed in one auroria, only one counts.

2. Finish in the start/finish area. The robot must stop by itself with all its support points in the finish area for the points to be awarded.
3. Successfully complete the surprise rule.
4. Bonus points will be awarded if the robot does not exceed 30 cm in height at the start. These points are awarded only if the robot exits the start area.

For every category at the national final

High-flowered aurorias (**green base**) must be pollinated with **green** pollen to achieve the maximum points.

Other flowers must be pollinated with red pollen to obtain the maximum points.

If 2 pollens are deposited in an auroria, it is the pollen of the correct color that counts, provided it touches the center of the flower (2X2 yellow cube).

Scoring

Missions	Max Points
Pollinate one of the 6 aurorias with the correct pollen (11) or	66
<i>Pollinate one of the 6 aurorias with the incorrect pollen (7)*</i>	42
Finish in the start/finish zone	8

**National final only*

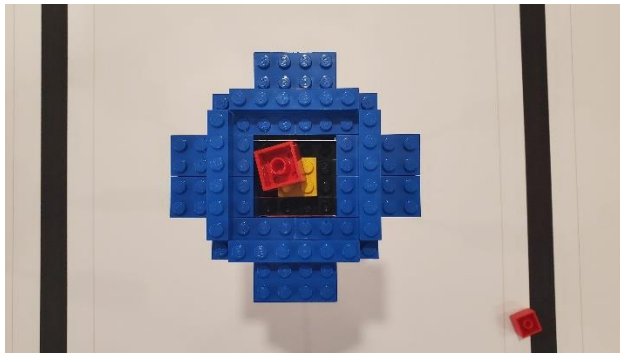
At the Competition	Max Points
Robot has a height of 30cm or less in the starting area (bonus)	6
Solve the surprise rule	20

Penalty	Max Points
Knock over one of the 6 aurorias or completely remove it from its circle (-6)	-36

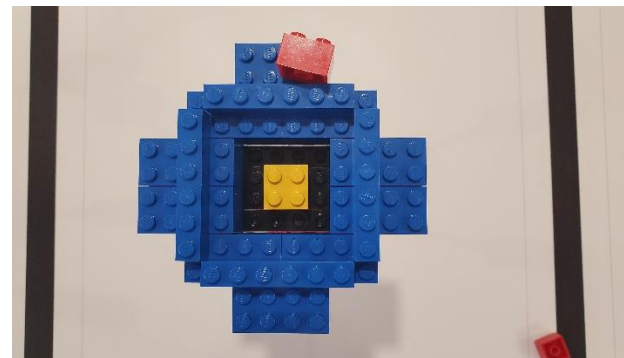
Total Points	100
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Score Interpretation

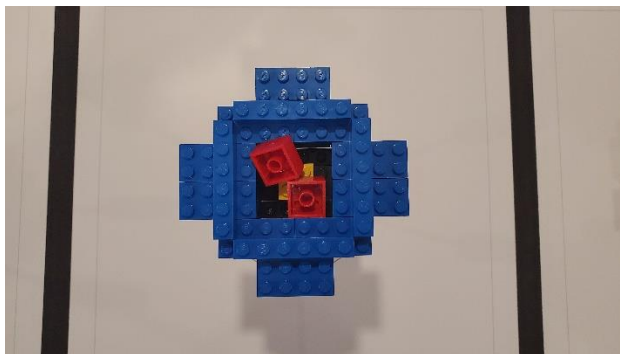
Pollinate an auroria



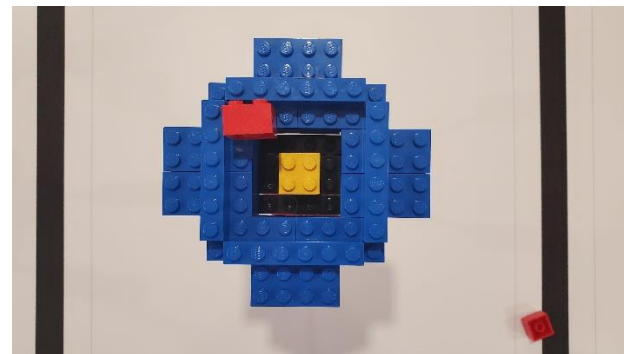
Pollen touches the yellow center of the flower = 11 points



Pollen doesn't touch the yellow center of the flower = 0 point

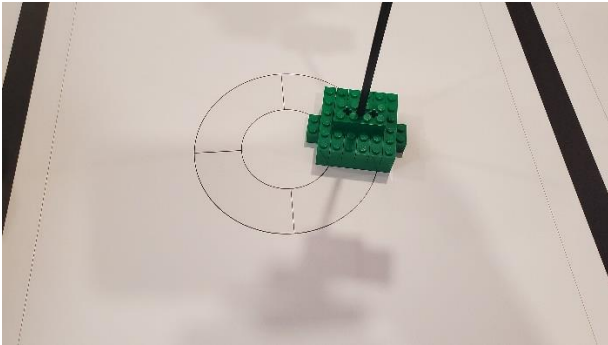


Two pollen cubes touch the yellow center of the flower = 11 points

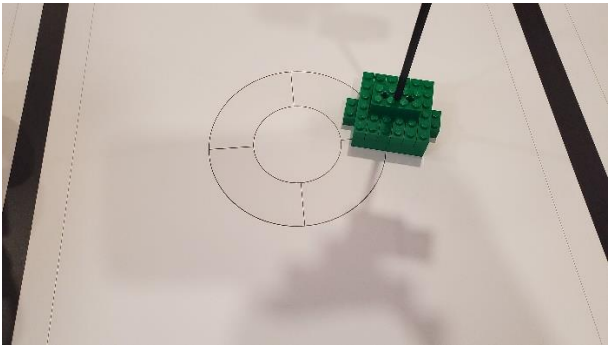


Pollen doesn't touch the yellow center of the flower = 0 point

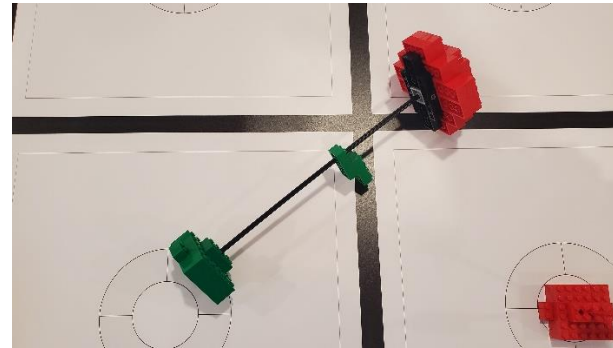
Knock over or move an auroria



Auroria still touches the small middle circle = OK

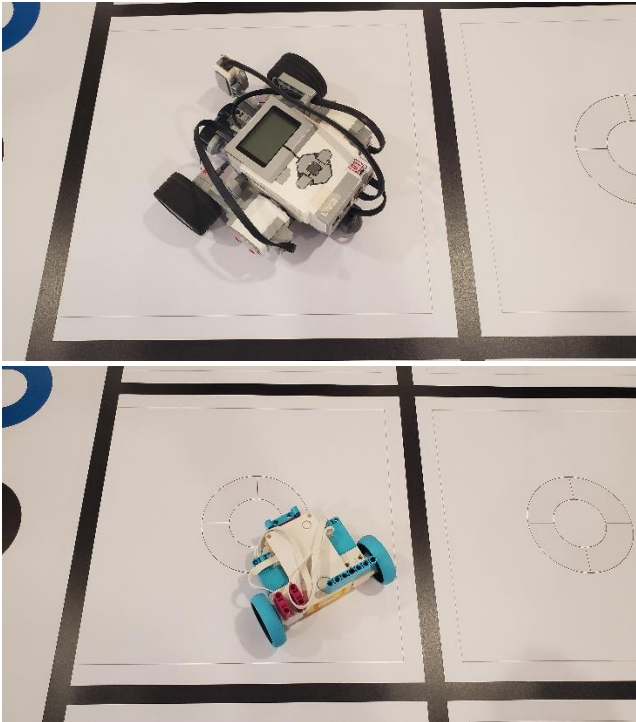


Auroria does not touch the small middle circle = -6 points

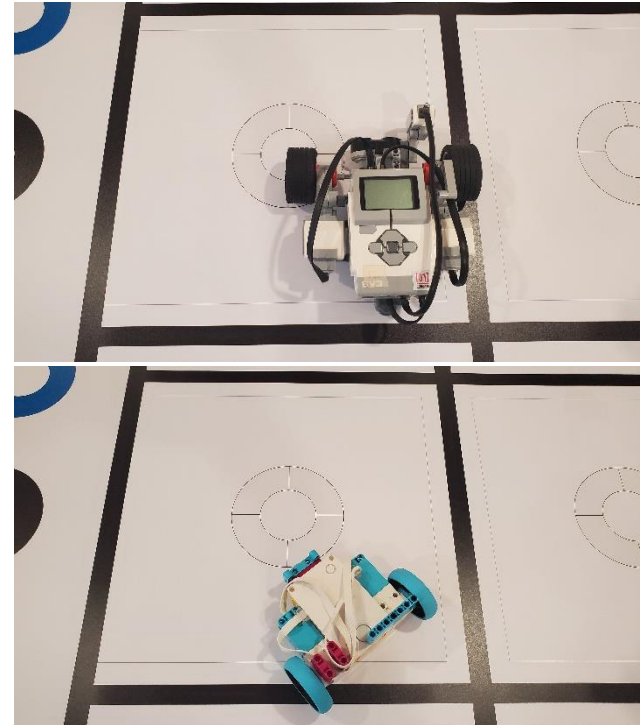


Auroria knocked over = - 6 points

Robot in the final zone



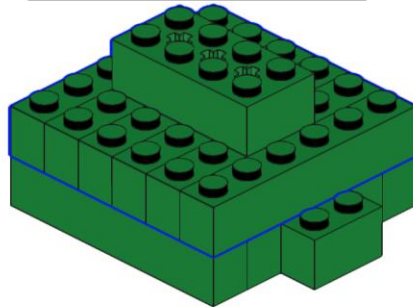
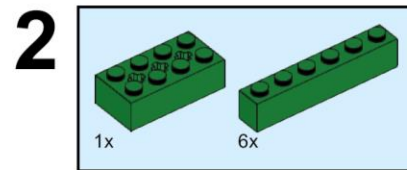
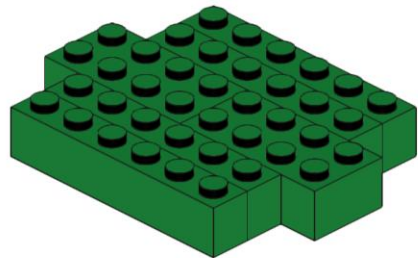
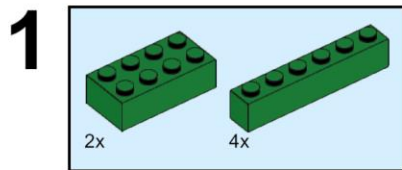
Robot in the final zone (all support points inside the final/starting zone) = 8 points



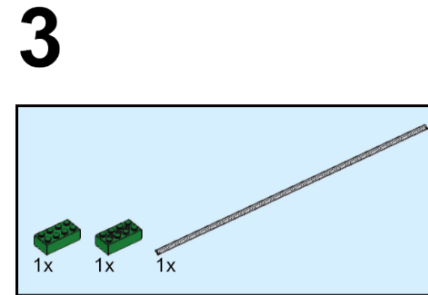
Robot not in the final zone (support point touches the black line) = 0 point

Building Instructions

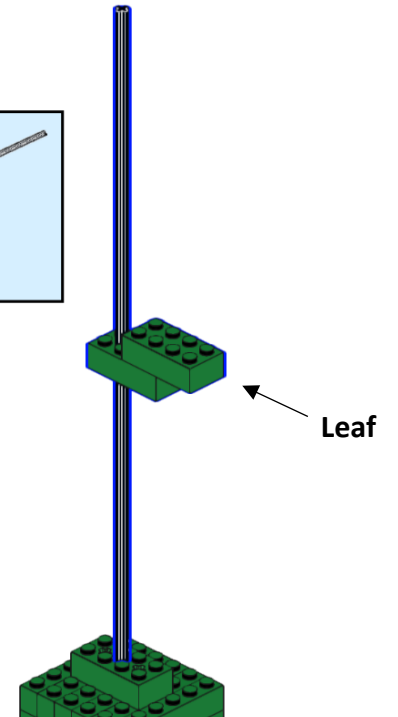
Auroria with green base (high) x2



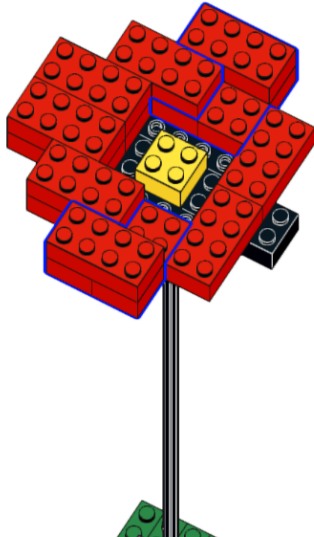
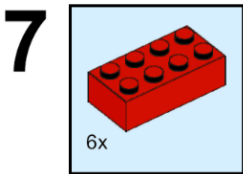
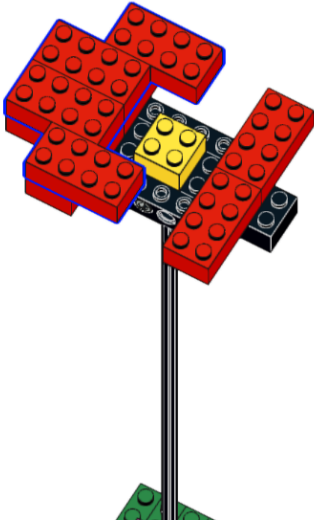
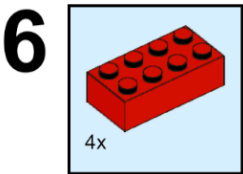
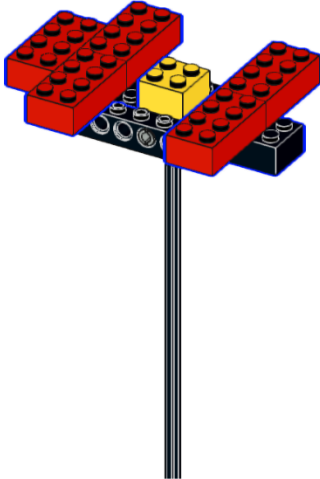
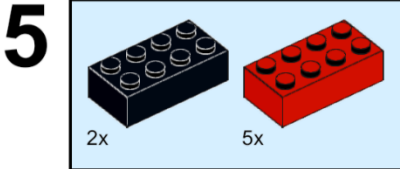
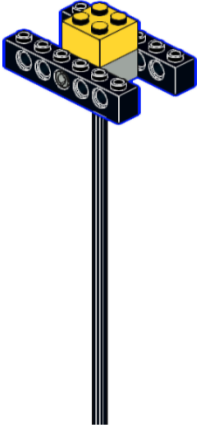
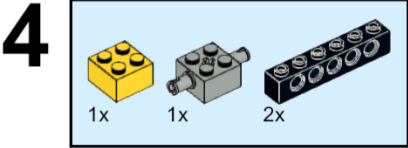
*The aurorias can be made with a combination of several rods, as long as the combined length is 32.

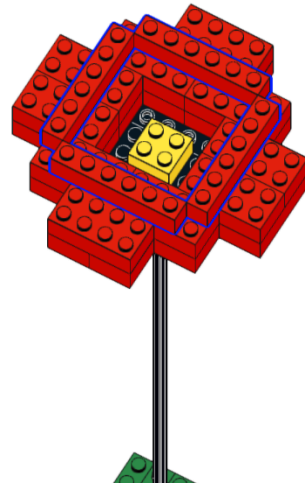
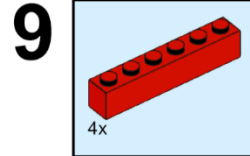
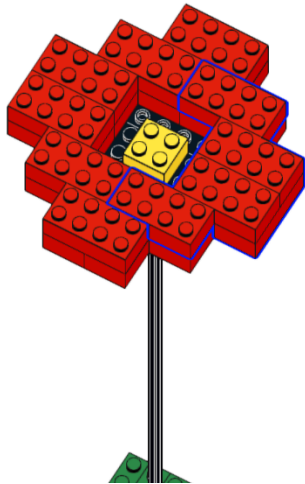
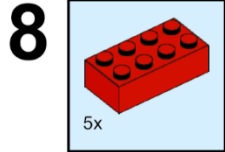


Length of 32



*Red is used here as an example, but this part of the auroria can be any color.



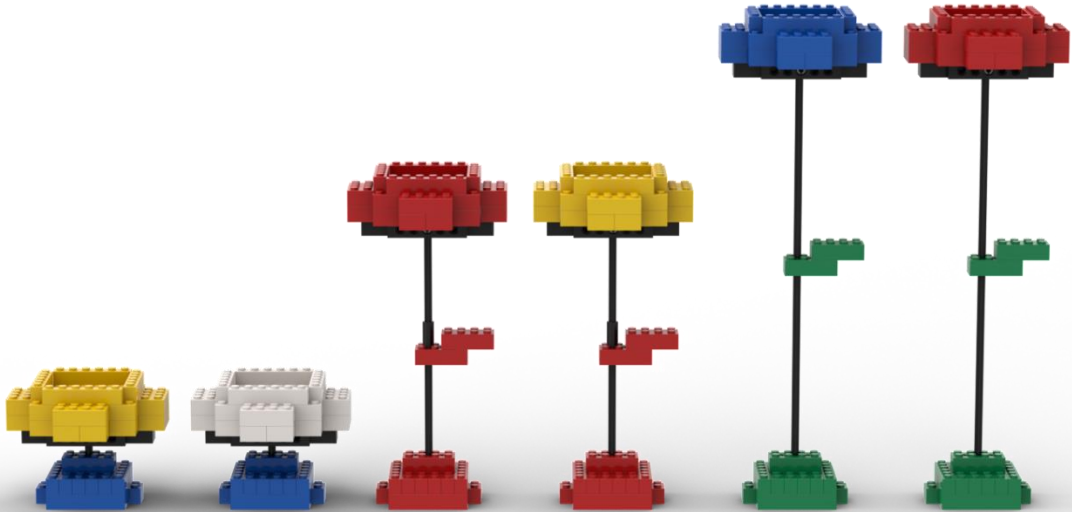


For the other aurorias :

- Repeat steps 1 and 2 with red then blue bricks.
- Repeat step 3 with rods of length 20 (2x10 or 8+12) for the red bases and 4 for the blue bases. There is no leaf on the blue-based aurorias.
- Steps 4 to 9 are the same. The flowers and leaves can be any color.

*Example on the next page

Side View



Top View

