



Photo credits : [Carrie Gregory](#)

Version 1.0
September 2021

Setting the scene

You are a lifeguard, the person responsible for the safety of beach visitors. As soon as you sit on top of your station, you are called from everywhere!

The visitors need you. Can you help them in time?

Do your best and go help them!

Overall function of the robot

You need to design a rescue robot that can take care of visitors who each need special help.

Description of the robot

The robots participating in the challenge must respect the following constraints:

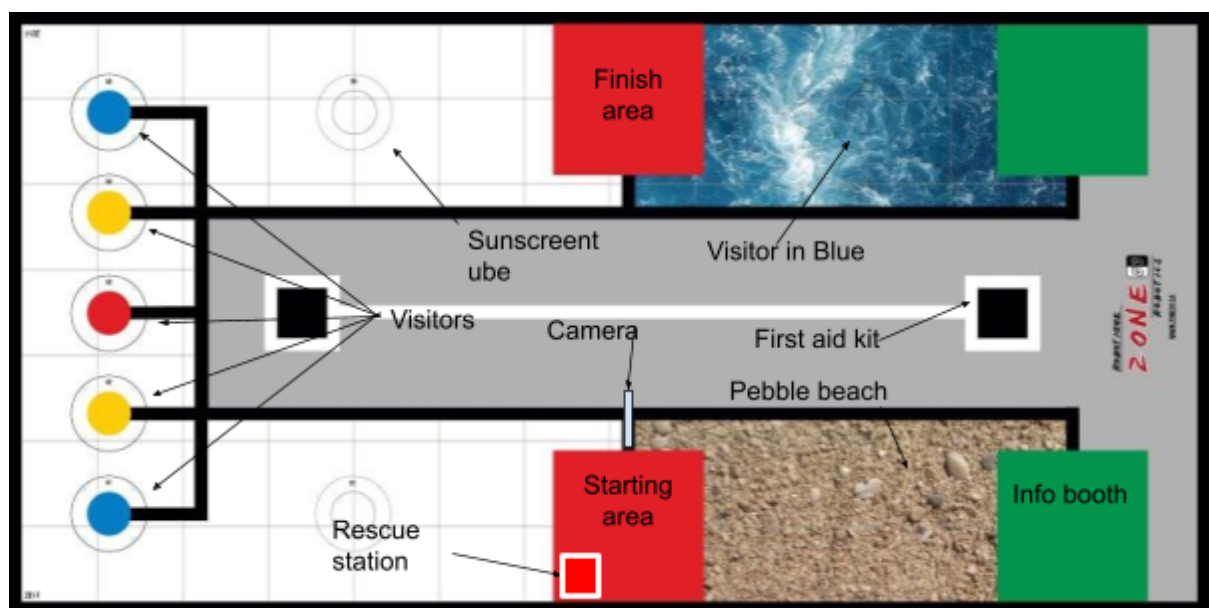
1. Maximum dimensions of the robot at the start: 30 X 30 X 30 cm
2. Only one controller (WeDo brick, Spike Essential brick)

Playing field description

Used surface: Z01-F Mat

The playing field is highly recommended for practicing the challenge, as the colors and lines define the precise locations of the objects.

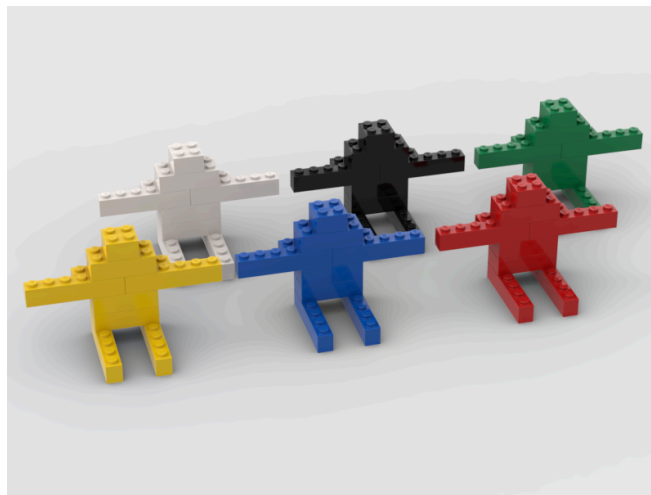
2D view



Description of the Game Accessories

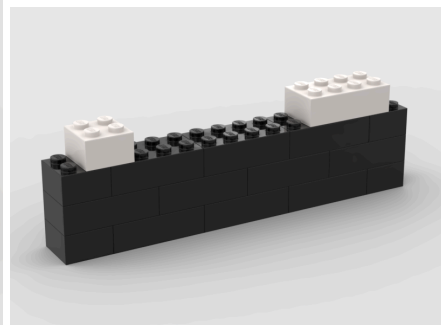
Visitors

The visitors are made from LEGO pieces. They are made of 2x2, 2x4 and 1x6 bricks of the same color for the same character.



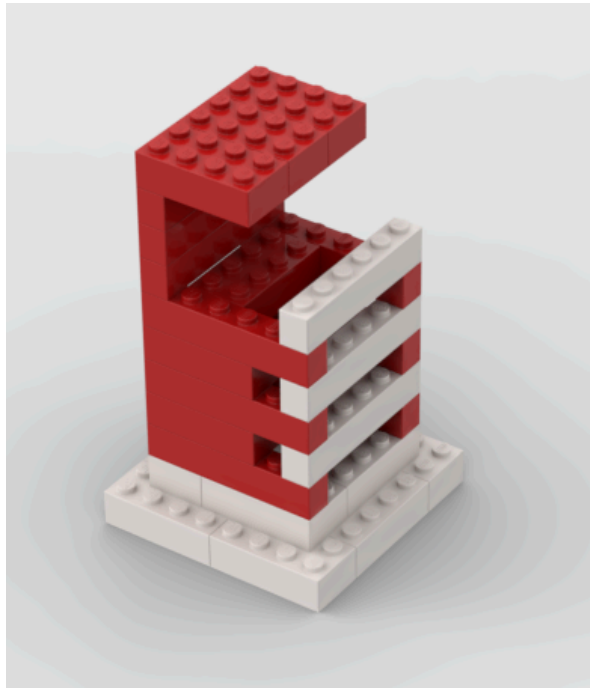
Accessories attributed to certain characters

The first aid kit, the tube of sunscreen and the camera are made of 2x2, 2x4, and 1x6 pieces. The first aid kit also requires a ring.



Rescue station

The rescue station is immobile and must not be moved out of the starting area. Composed of 2x4 and 1x6, it is fragile.



Positioning of the Game Accessories

- The visitor in blue is placed in the circle in the water, facing the pebble beach.
- The visitors in green, black, white, red and yellow are placed randomly on the 5 colored circles, facing the center of the playing area.
- The tube of sunscreen is placed standing on the circle in the white section on the opposite side of the camera.
- The camera is placed on the intersection of the black lines near the red starting area.
- The first aid kit is placed on the black square near the Zone01 logo. The ring faces the center of the playing surface.

Detailed Description of the Challenge

The robot is set up in its starting position, i.e. it must be completely inside the red zone on the beach side. The rescue station must also be located in the red zone.

At the judge's signal, the robot starts its missions in any order.

- The robot must move the visitor in blue out of the water to the pebble beach. If the visitor in blue is still in the water after 20 seconds, the judge saves the visitor by removing him from the water and no points will be awarded.
- The robot must move the visitor in yellow who needs information to the green area identified on the drawing.
- The robot has to bring sunscreen to the visitor in red who is getting sunburned.
- The robot must bring the camera to the visitor in black who has lost it.
- The robot must bring the first aid kit to the visitor in green who is not feeling well.

The challenge is completed when a team member says "Stop" or when the time is up (**max 2 minutes**).

Surprise Rule

A surprise rule could be announced to teams on the morning of the competition. It would allow them to accumulate extra points.

General Rules of the WeDo Game

During an attempt, the team is allowed to touch/grab the robot only when any part of the robot, e.g. a wheel, touches a red square zone.

During an attempt, the team is also allowed to move a robot from one red zone to another red zone. It is only allowed to move the robot, not the game accessories.

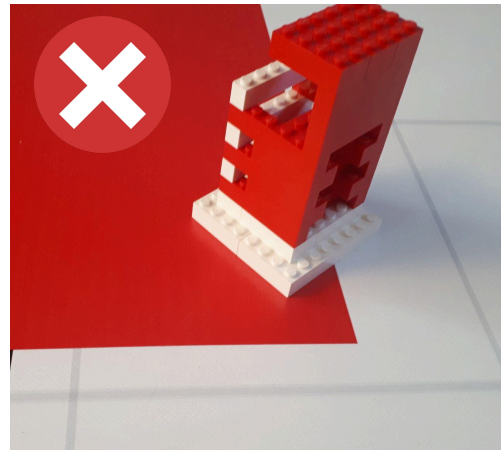
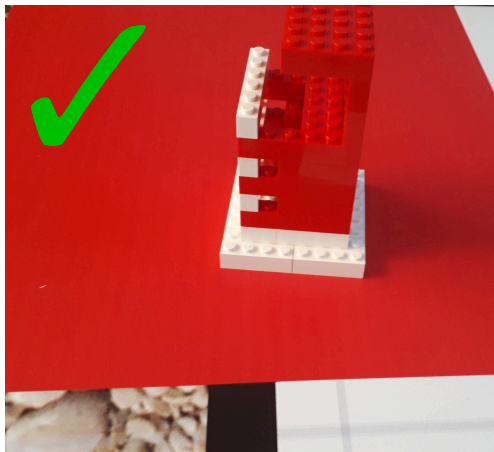
Score Sheet

| | Maximum score |
|---|---------------|
| Visitor in blue is completely out of the water within 20 seconds | 10 |
| Visitor in blue completely in the pebble beach area | 5 |
| First aid kit partially in the big circle of the visitor in green | 16 |
| Camera partially in the circle of the visitor in black | 11 |
| Sunscreen tube partially in the big circle of the visitor in red, standing up | 12 |
| <i>Sunscreen partially in the big circle of the visitor in red, laying down</i> | 8 |
| Visitor in yellow completely in the green information area | 17 |
| Rescue station completely in the red zone during the entire round | 6 |
| Robot ends the round completely in the finish area | 3 |
| Surprise rule is successful | 20 |
| Visitor unnecessarily moved from his small circle (-5) | -20 |
| Visitor injured (damaged) (-15) | -90 |
| Total | 100 |

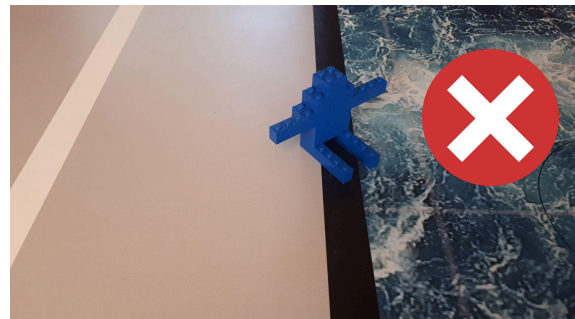
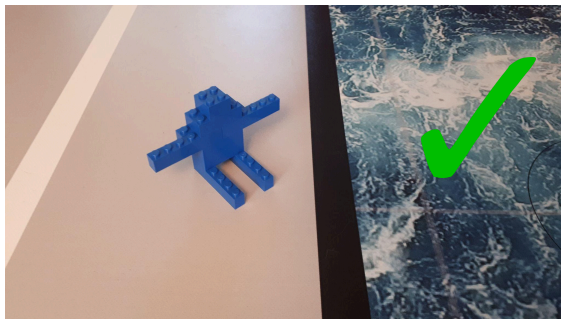
Time will be used to rank the teams with the same score.

Images of the Scores

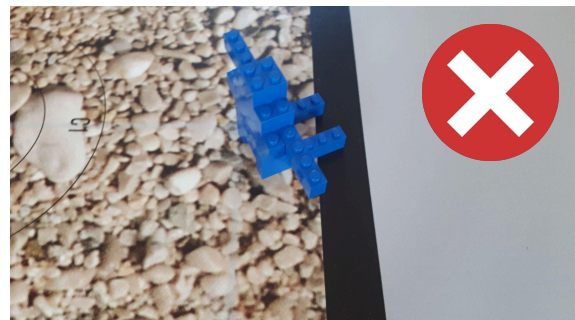
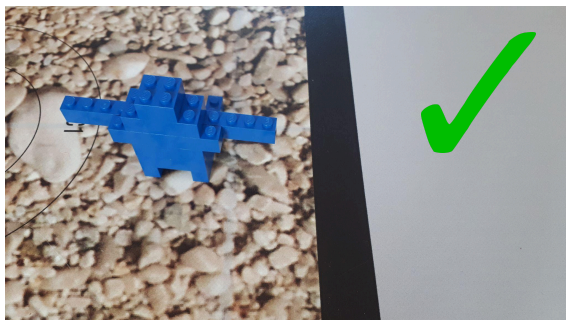
Starting position: Completely in the red zone



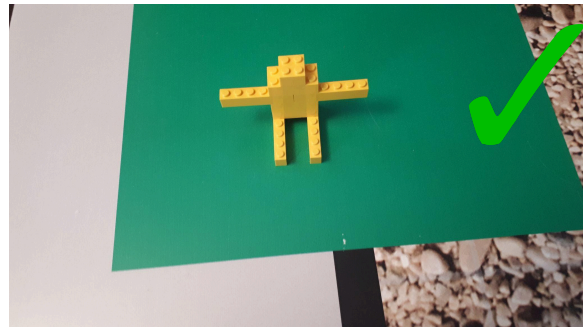
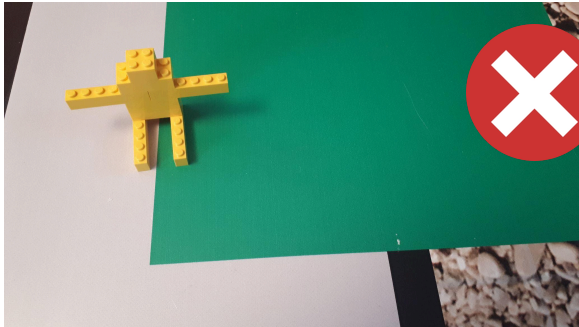
Visitor in blue is completely out of the water



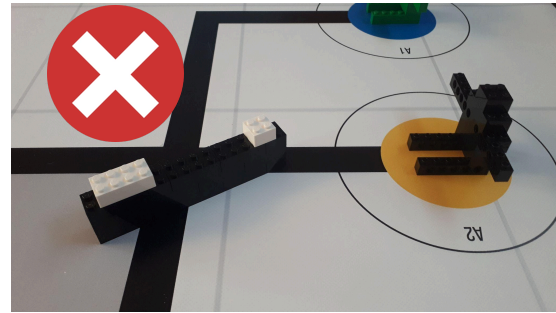
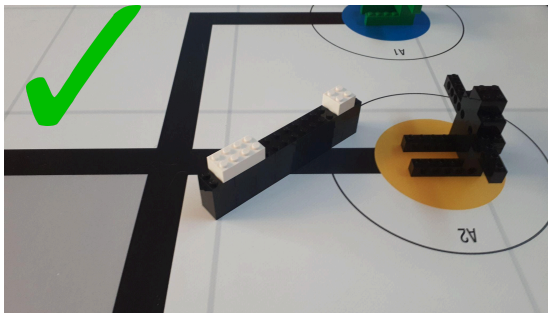
Visitor in blue is completely in the pebble beach area



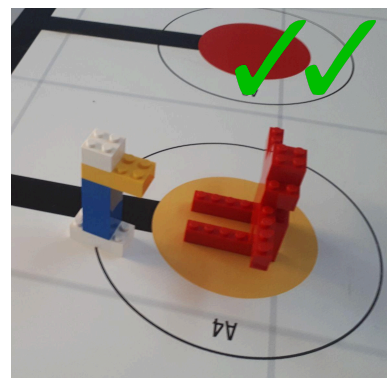
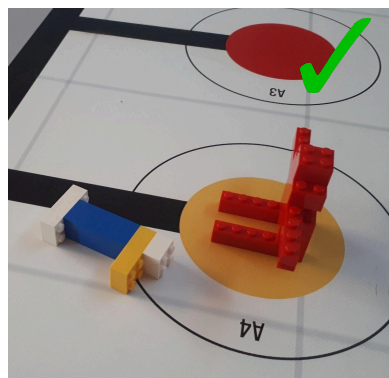
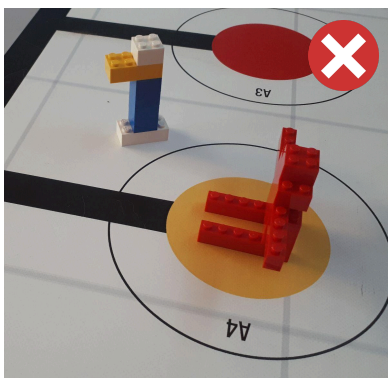
Visitor in yellow is completely in the green information area



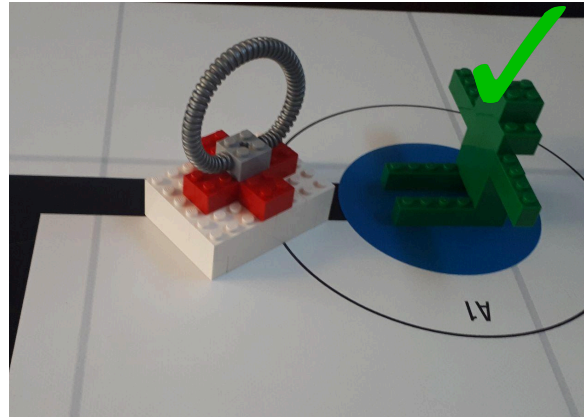
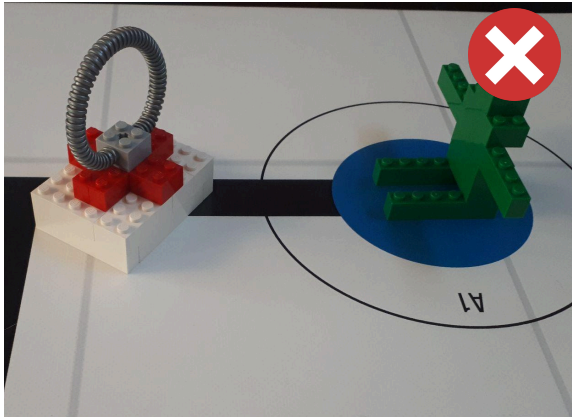
Camera is partially in the big circle of the visitor in black



Sunscreen is partially in the big circle of the visitor in red

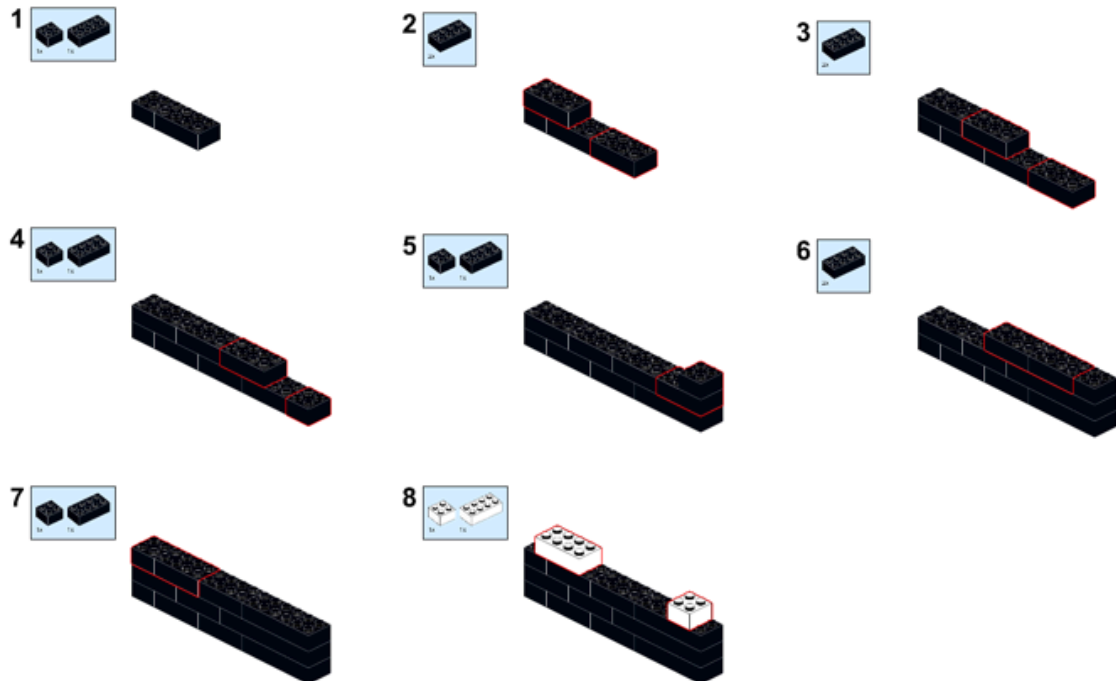


First aid kit is partially in the big circle of the visitor in green

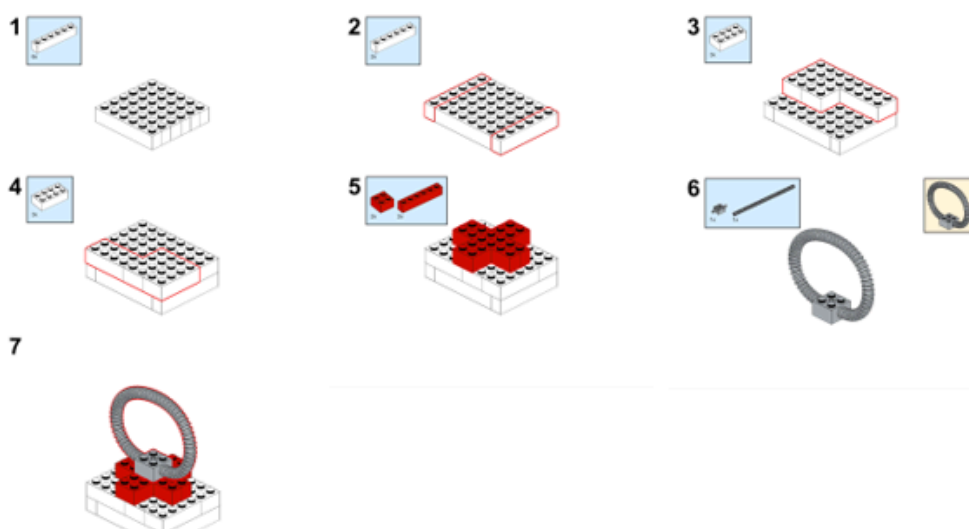


Assembly instructions

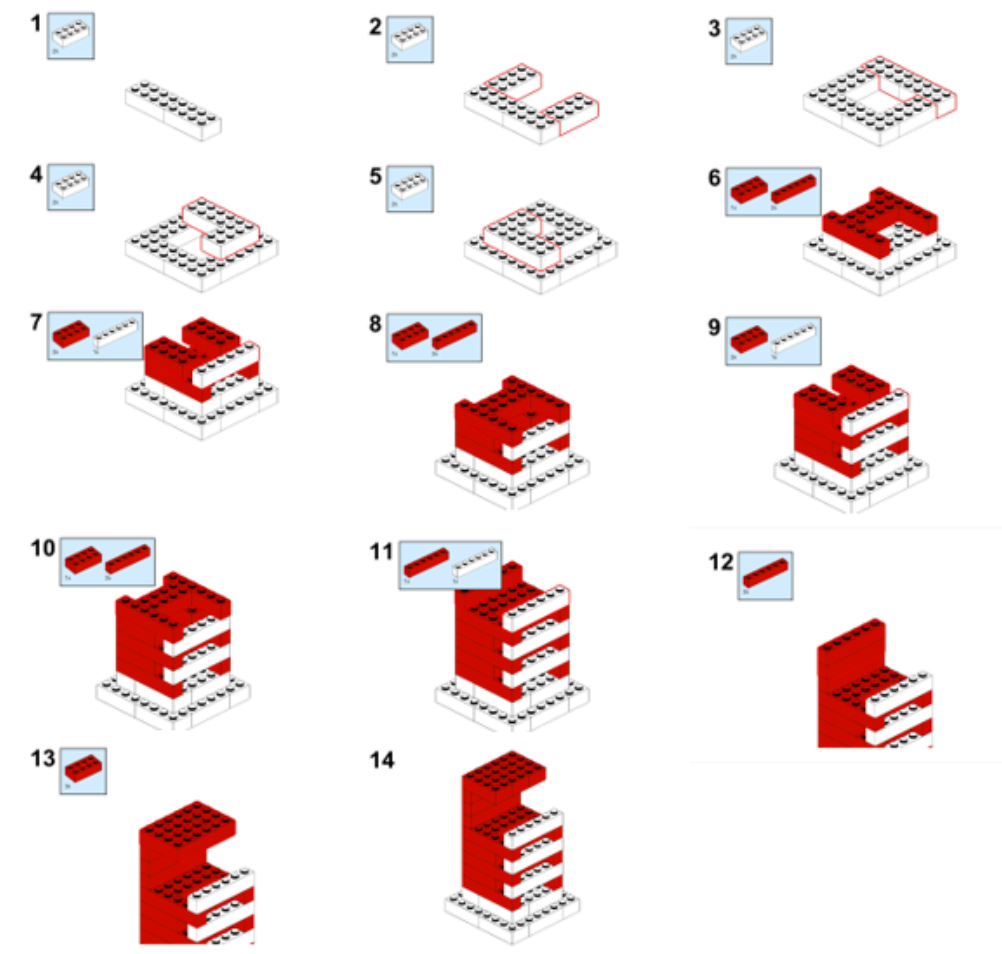
Camera 1X



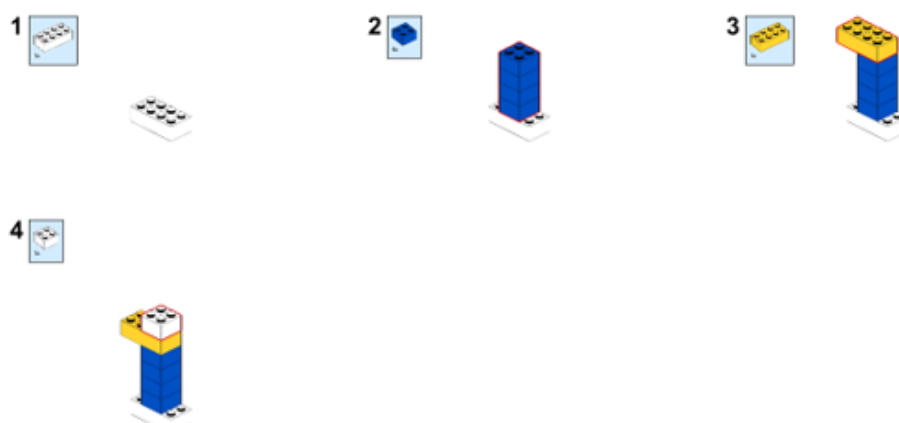
First aid kit 1X



Rescue station 1X



Tube of sunscreen 1X



Visitors, total 6 (red, green, black, white, yellow and blue)

