



MISSIONS:

WHAT'S POSSIBLE?

Let's start by inspecting the rules...



In and Out are defined

Robots must be completely **IN** base to launch.

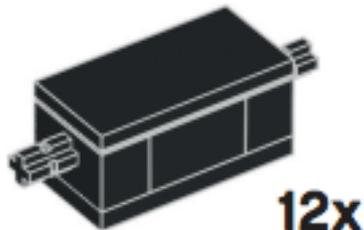


Models must be fully **IN** the Safety to score.

Models that are not fully **IN** are taken **OUT** of play by the referee.

Penalty points are deducted for:

- Interrupting (i.e. touching the robot) when it is partly or completely **OUT** of the Safety. Robots must be relaunched after an interruption.
- Leaving equipment partly or fully **OUT** of the Safety at the end of the match.
- Black bars **OUT** of bins and on the mat at the end of the match.



Penalties are marked by placement of Black bars on the mat by the referee.



During the match...

Referees **OBSERVE** the process by which bars and bins get to the scoring position. Materials in green bins must go through the sorter and the green bins in Safety must be ones moved from the West (ship) transfer area of the other table.



At the end of the match...

Referees **SCORE** the ending state or position of the bins, bars, bags, animals, valuables, methane, toys, car and truck.

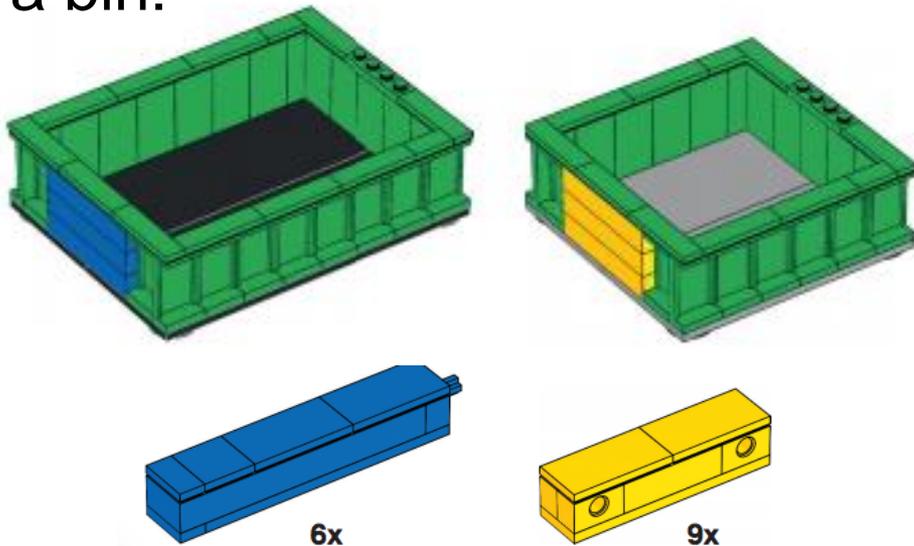
Scoresheets Record the Evidence

Mission	Location	Possible	Actual
Recycled materials	# of Green Bins in Safeties	0-4	
Methane	# inserted	0-2	
Transport	a. Yellow bin on Truck or	0-1	
	b. Yellow bin EAST of track	0-1	
Sorting	# of Blue and Yellow Bars in Green Bins	0-14	
	# of Blue and Yellow Bars in West transfer Bins	0-14	
	# of Black Bars in Green Bin	0-12	
	# of Black Bars in Black Landfill Bin	0-12	
	# of Black Bars in set up position	0-6	
	# of Black Bars in scoring flowerpot	0-2	
Careers	Figures in sorting area	0-2	
Scrap Cars	a. Windshield inserted correctly	0-1	
	b. Car folded and in East Transfer area	0-1	
Cleanup	# of Plastic Bags in Safety	0-2	
Composting	a. Compost ejected	0-1	
	b. Compost in Safety	0-1	
	c. Compost in flowerpot	0-1	
Salvage	Valuables in Safety	0-1	
Demolition	# of Bars left standing	0-12	
Penalties	# of Black Bars on mat	0-12	

There are multiple ways to score...

The “Using Recycled Material” mission

Green bins start empty in the sorter. At least one bar of the correct color must be sorted into a bin:



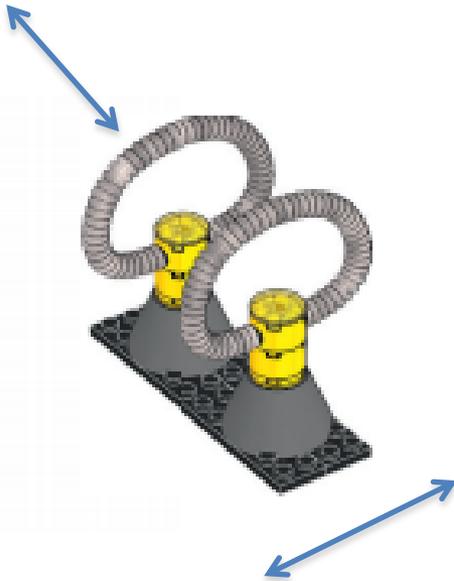
- Scoring option 1: A bin with at least one bar of the correct color earns points for BOTH teams if it is transferred to the other team’s safety through the WEST (ship area) transfer.

- Scoring option 2: Up to 4 bins (2 from each table) can be transferred.

- Scoring option 3: Bars in bins are scored. Bars earn more points if the bin is in the WEST transfer area than bars in bins in the sorting area.

The “Methane” mission

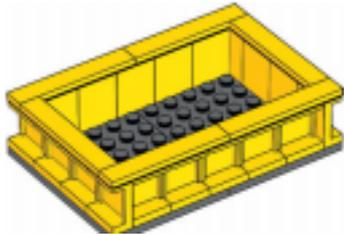
One or both methane tanks are collected and moved into position:



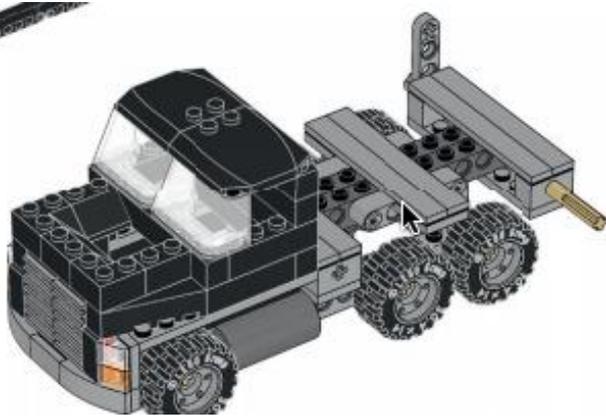
Methane starts in the landfill in the orientation shown on the mat.

- Scoring option 1: One methane tank is inserted in the truck engine compartment **OR** one methane tank is inserted in the factory’s power station.
- Scoring option 2: One methane tank is inserted in the truck engine compartment **AND** one methane tank is inserted in the factory’s power station.

The “Transport” mission



The yellow bin with one yellow bar starts in the sorter



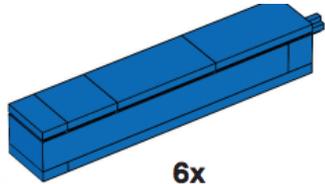
Transport the yellow bin by pushing the truck along the track:

- Scoring option 1: The yellow bin is loaded successfully onto the truck as it is moved past the sorter.

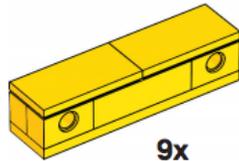
- Scoring option 2: The yellow bin ends up off the truck beyond the EAST end of the track.

The “Sorting” mission

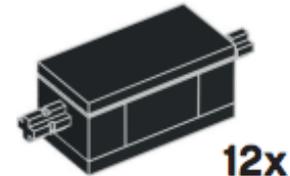
Blue, Yellow and Black Bars earn points depending on their position at the end of the match:



2 Blue bars start in the sorter and 4 start in the building.



2 Yellow bars start in base, 2 in plane packaging, 4 in the building and 1 in the Yellow bin.



2 Black bars start in the sorter, 2 are in the plane packaging, 4 are in the building, and 4 are for penalties.

•Scoring option 1: Blue, yellow and black bars are sorted into correct bins through the sorter.

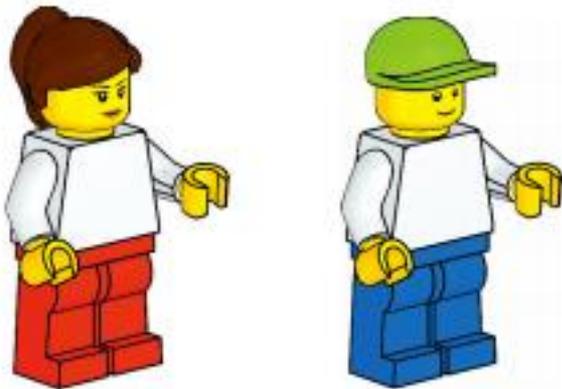
•Scoring option 2: Black bars are in their original set up position in the building and or package in the factory.

•Scoring option 3: Black bars are in black landfill bin or in a plane box with compost.

The “Careers” mission

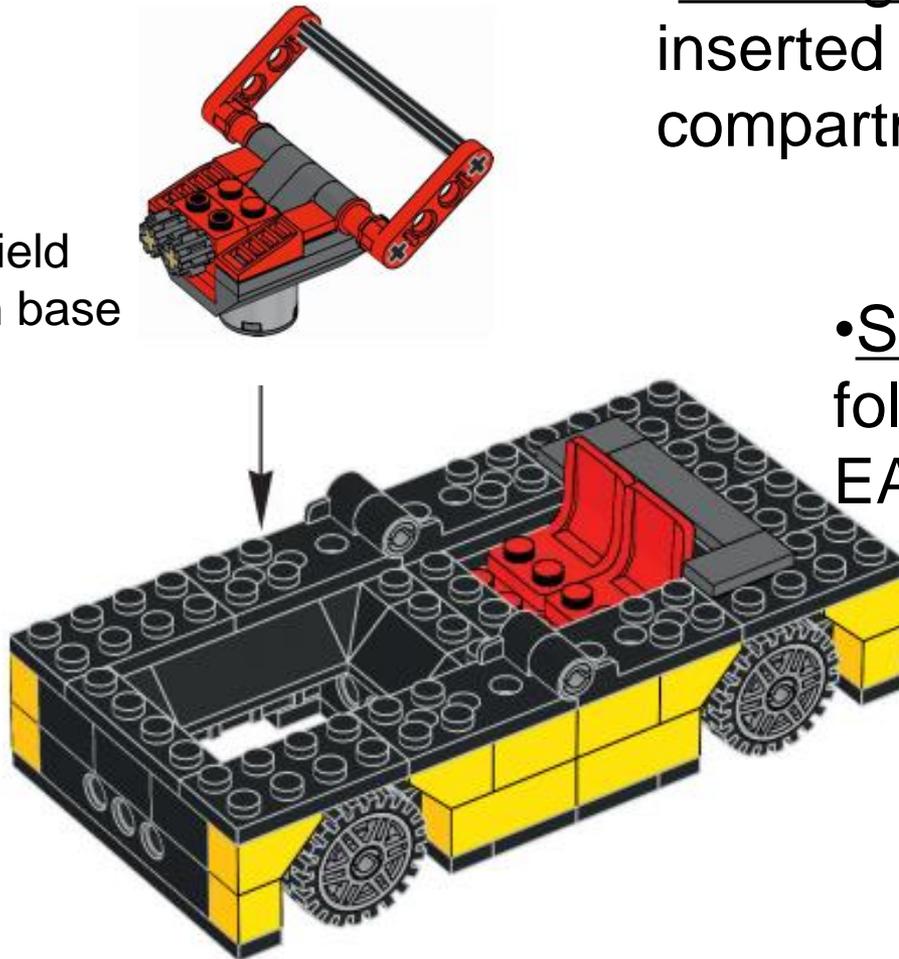
Move one or more figures to the sorting area.

Leniency bonus: Once the figures are in position, team technicians or the referee can unclog bars that get stuck in the sorting machine and/or pick up bars that miss the bins or are miss-sorted. These can be put in the correct bins by hand.



The “Scrap Cars” mission

Windshield
starts in base



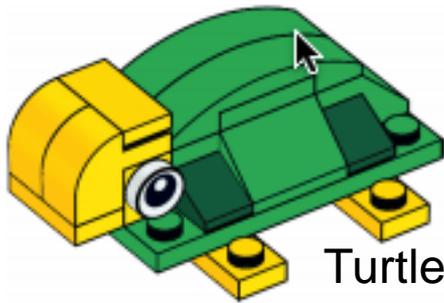
- Scoring option 1: Windshield is inserted into the engine compartment facing forward .

- Scoring option 2: Car is folded up and moved to EAST (truck) transfer area.

The “Cleanup” mission

Move plastic bags to safety:

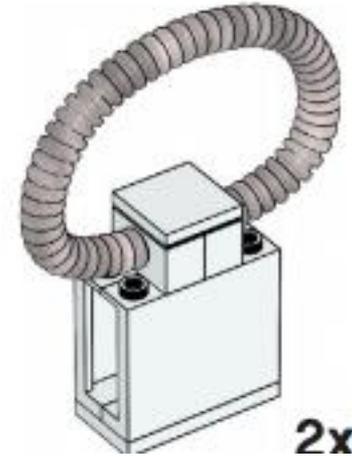
- Scoring option 1: Move one or both plastic bags to Safety.
- Scoring option 2: Move one or more animals fully into an empty black circle in the ocean.
- Scoring option 3: Move the chicken fully into the black circle in the landfill.



Turtle starts partly in the small circle in the ocean



Chicken and octopus start in base.

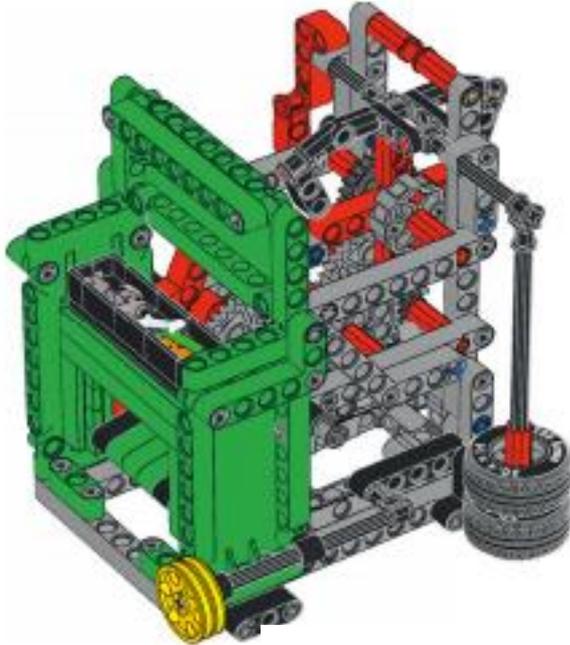


One plastic bag starts in the sorting machine. The other is in the small black circle in ocean.



The “Composting” mission

Activate the composting process:



- Scoring option 1: The compost is ejected.
- Scoring option 2: The compost is completely in Safety.
- Scoring option 3: The compost is inserted into one of the plane packages that is completely in Safety.

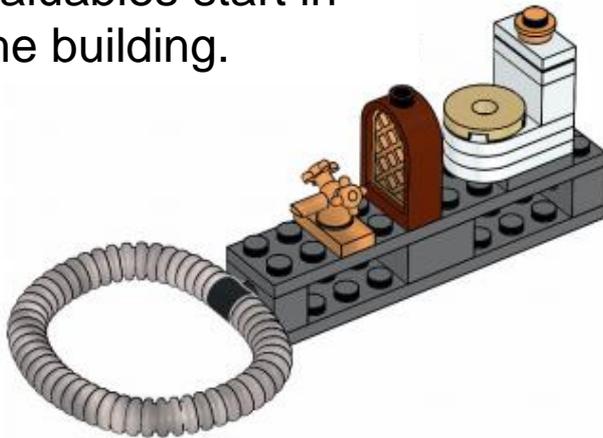


Compost starts inside the composter.

The “Salvage” mission

The valuables are moved from the building to Safety.

Valuables start in
the building.



The “Demolition” mission

Demolish the building:



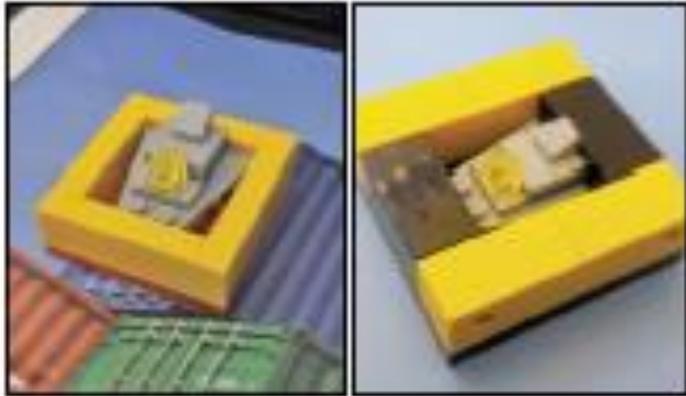
- Scoring option 1: None of the 12 beams is left in a standing position.

- Scoring option 2: Deal with the black bars to avoid a deduction by sorting them into a green bin or taking them to the black landfill bin.

- Scoring option 3: Sort all of the bars into the correct bins.

The “Purchasing” and “Repurposing” missions

Buy one or both planes and deal with packaging:



Plane in “friendly” packaging starts in East transfer area

Plane in “unfriendly” factory packaging starts in the factory.

Scoring option 1: Move the plane with friendly packaging to Safety.

Scoring option 2: Remove the plane and insert the compost into the empty box.

Scoring option 3: Move the plane with factory packaging to Safety. Deal with black bars or take a point deduction.

Scoring option 4: Disassemble the factory packaging and sort the yellow and black bars into the green bins and/or take black bars to the black Landfill bin.

Scoring option 5: Remove the plane and insert the compost into the factory packaging.

The most important mission - should you choose to accept it - is to HAVE FUN!



Be sure to check the FLL Challenge updates and forums when questions come up.