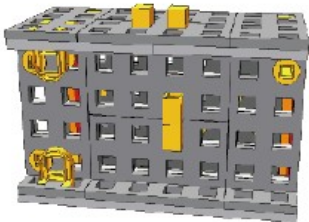
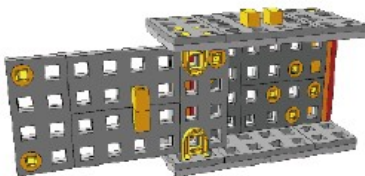
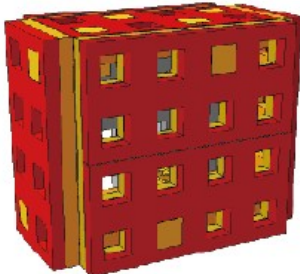


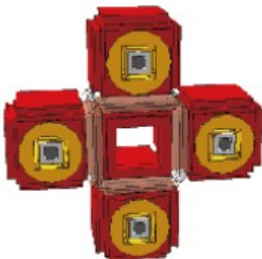



Task models

Onsite equipment includes models built with STEM kits.

After task models built, please put them on corresponding marks.

A brief intro of models used is listed as below:

		
Book of Revelation (initial status)	Book of Revelation (finished status)	
Book of Revelation : fixed on the field; front board movable horizontally; limiting devices available on left and right side;		
		Move the megalith (initial status)
		Move the megalith (initial status)
Megalith moving : megalith located on a specific area inside the field;		
		
Cross-shaped gem	Fetch the cross-shaped gem (initial status)	
Cross-shaped gem : located on the closed side of the seesaw; when open side of the seesaw pressed by the robot, the gem slips off; magnets available on 4 sides of the gem and magnetic pole be of the same direction;		

Theme 2016

Theme 2015

Theme 2014


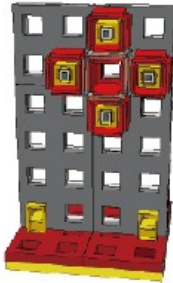
Theme 2013

Theme 2014



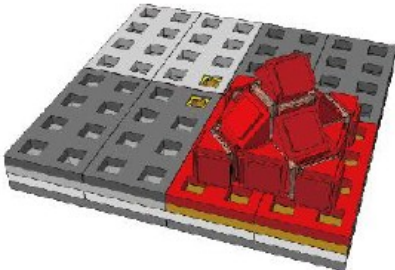

Competition Theme

Competition Tasks


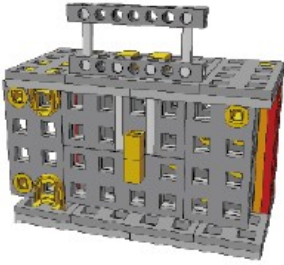
Competition support

 <p>Return the gem to its shelf (initial status)</p>	 <p>Return the gem to its shelf (finished status)</p>
---	--

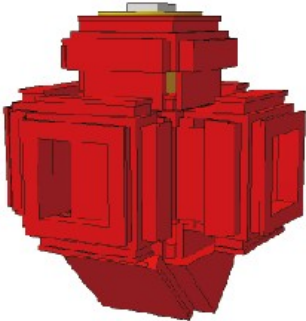

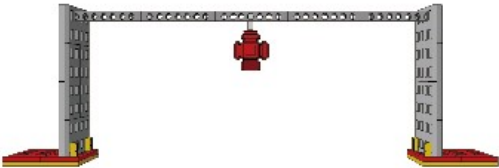
Gem shelf : fixed on the field; 4 magnets inserted in the shelf horizontally and magnetic pole be of the same direction;

		
Desktop of the mysterious pyramid	Pyramid	
	Mystery of the pyramid (finished status)	

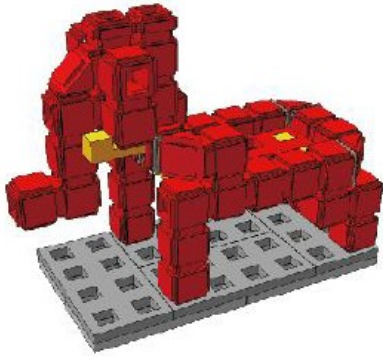
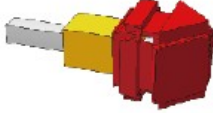

Mystery of the pyramid: the baseplate fixed on the field; pyramid model movable on the baseplate;

 <p>Shuttle device</p>	 <p>Initial status of the shuttle device</p>
---	---

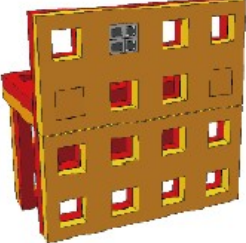
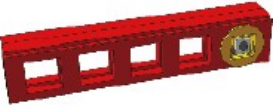

Shuttle device : inserted in designated holes on the Book of Revelation;

 <p>Fruit</p>	 <p>Pergola</p>
	 <p>Fruit picking (initial status)</p>

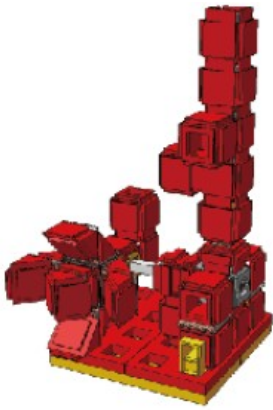
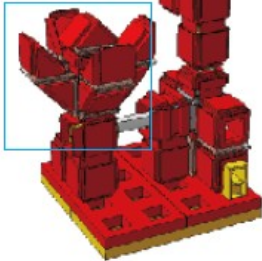
Fruit picking : pergola fixed on the field; top side of the fruit attracted to the magnet of the pergola;

 <p>Mammoth</p>	 <p>Stone tool</p>  <p>Hunting (finished status)</p>
--	--

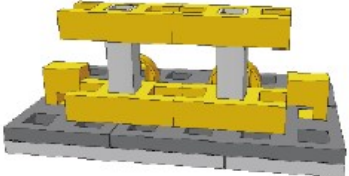
Hunting: stone tool offered by referee before the contest; mammoth fixed on the field; robot can cast the stone tool upon the animal ;

 <p>Rock wall</p>	 <p>Paint</p>	 <p>Hunting diary (finished status)</p>
--	--	---

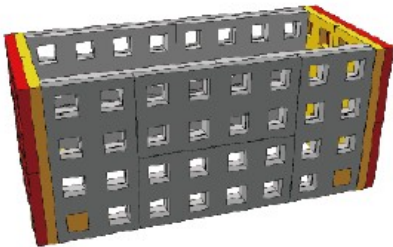
Hunting diary : paint (one side with magnet) offered by referee before the contest; robot can coat (fix) the paint on the rock wall;

 <p>Make fire using the hand drill method (initial status)</p>	 <div> <p>Inside the blue box is the flame.</p> <p>Make fire using the hand drill method (finished status)</p> </div>
---	--

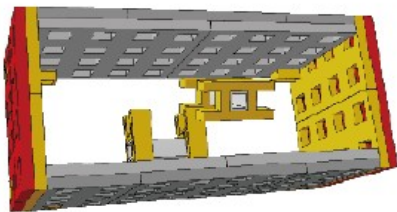
Make fire using the hand drill method : Robot drills the wooden stick to make fire.

 <p>Grains</p>	 <p>Grain harvesting (initial status)</p>
 <p>Farmland</p>	

Grain harvesting: Robot harvests grains.

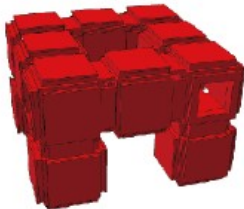


Food warehouse

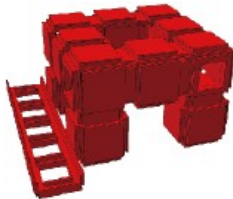


Grain harvesting (finished status)

Storing of grains : food warehouse fixed on the field; robot delivers grains into the food warehouse;

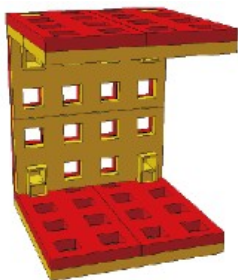


Stoneware

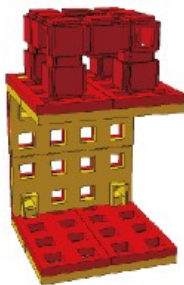


Stoneware fetching (initial status)

Stoneware fetching : Please note that new stoneware is friable.



High Platform



Stoneware hanging (finished status)

High platform : Robot fetches and then places the stoneware on the platform for drying.

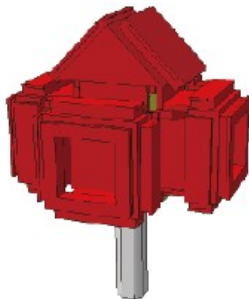


Mound model

Mound model : Robot pushes the mound model away to change the flow direction of a river.



Collecting of fire source (initial status)



Fire source

Fire source: Robot takes the fire away.

Final playing field is subject to the real one onsite. There may be slight changes under the basic frame. But during the contest, the playing field will be kept relatively stable.

Task specifications and scores

Task 1	Book of Revelation	20 points
Content	Robot opens the front board of the Book of Revelation.	
Sign of completion	No less than 8cm (width of 2# slab) of the front board is exposed to the air.	
Notes:	Moving of the front board may be disturbed by the shuttle device.	
Task 2	Move the megalith	20 points
Content	Robot moves away the megalith.	
Sign of completion	Vertical projection of the megalith should not be on the designated white area anymore and should be within the field.	
Notes:	None	
Task3	Fetch the cross-shaped gem	40 points
Content	Robot presses the seesaw to have the gem slide down.	
Sign of completion	The gem is not on the seesaw anymore and is still within the field.	
Notes:	Pressing of the seesaw may be interfered by the megalith.	
Task 4	Return the gem to its shelf	50 points
Content	Robot fixes the gem on the rock wall.	
Sign of completion	The gem is fixed on the rock wall and has no touching point with the ground.	
Notes:	The gem should not be restructured.	
Task 5	Mystery of the pyramid	50 points
Content	Robot moves the red pyramid to the red area on the baseplate.	
Sign of completion	The pyramid is moved to the red area on the baseplate and its vertical projection is outside the white area of the baseplate. In addition, the pyramid should not have any touching point with the ground of the playing field.	
Notes:	Vertical projection of any part of the pyramid enters the red area is considered as task finished. Gray area is the buffer zone.	
Task 6	Look for the shuttle device	30 points
Content	Robot fetches the shuttle device from the Book of Revelation.	
Sign of completion	The shuttle device has no touching point with the Book of Revelation and is still within the playing field.	
Notes:	The shuttle device is pre-placed on the Book of Revelation.	
Task 7	Travel through times	50 points
Content	Robot takes the shuttle device to the base on the stone age (first floor) via the time tunnel.	
Sign of completion	Vertical projection of the shuttle device enters the base area on the first floor.	
Notes:	Shuttle device could only be brought to the first floor by the robot. Inside the base on the first floor, players can fix the shuttle device on the robot.	
Task 8	Fruit picking	30 points
Content	Robot picks the fruit and then takes it to the base.	
Sign of completion	Fruit leaves the pergola completely; vertical projection of the fruit enters the base on the first floor.	
Notes:	None	
Task 9	Hunting	30 points
Content	Robot throws the stone tool to the mammoth.	
Sign of completion	The stone tool is on the mammoth, and has no touching point with the ground.	
Notes:	The stone tool is offered by referee before the contest.	
Task 10	Hunting diary	30 points
Content	Robot pastes the paint on the rock wall.	
Sign of completion	Paint is on the rock wall and doesn't touch the ground.	
Notes:	Paint is offered by referee before the contest; Distance between magnets of the rock wall and the ground should be larger than 30cm;	
Task 11	Make fire with hand drill technology	50 points
Content	Robot pushes flame model to make it upright.	
Sign of completion	The flame model is upright without any touching point with its baseplate.	

Notes:	As to the flame model, please refer to “Make fire using the hand drill method” in the second part (2.Task models) of the contest rules.	
Task 12	Grain harvesting	20 points
Content	Robot harvests grains in the farmland.	
Sign of completion	Grains are outside the farmland and don’t touch the field (including the base on the first floor).	
Notes:	Each grain means 10 points; 2 grains in total;	
Task 13	Storing of grains	40 points
Content	Robot delivers grains into the warehouse.	
Sign of completion	Grains are inside the warehouse and do not touch any other part of the field.	
Notes:	Each grain means 20 points in this task; 2 grains in total;	
Task 14	Stoneware fetching	30 points
Content	Robot fetches the stoneware and takes it away.	
Sign of completion	The stoneware does not touch the ground (including the base area) and is still within the playing field.	
Notes:	New stoneware is friable. Once the stoneware is broken, points got in this task are invalid.	
Task 15	Hang the stoneware for air dry	30 points
Content	Robot takes the stoneware close to the high platform and then put it on the upper surface of the platform.	
Sign of completion	The stoneware is on the upper surface of the high platform and does not touch the ground.	
Notes:	New stoneware is friable. If broken, points got in this task are invalid.	
Task 16	Redirect flow direction of a river	30 points
Content	Robot pushes the mound model away to change the flow direction of a river.	
Sign of completion	The mound model is outside the designated red area while still inside the playing field.	
Notes:	None	
Task 17	Collecting of fire source	50 points
Content	Robot fetches the fire source and takes it to the second floor via the time tunnel.	
Sign of completion	The fire source is on the second floor. And vertical projection of some parts or all parts of the fire source is on the same floor.	
Notes:	Once vertical projection of the fire source enters the second floor, the contest finished.	
Routine tasks: 17 pieces		Total scores: 600 points

Before debugging phase starts, an extra task of 100 points will be released on the scene. Players decide whether they will do the extra task or not. Once decided to do the extra task, players should also finish it within the preset time for routine tasks. No extra time will be available for the extra task.

During the contest, players cannot use prop items brought by themselves without authorization. They can only use prop items provided by the organizers of the contest.