

TITLE: InterSEK Robotic Trip

THEME: Educational robotics

COORDINATOR: Oscar Carro, oscar.carro@eiris.edu.es

PARTICIPANTS: A team from each school consisting of 2 or 3 students.

SKILLS: A test of robotics and programming.

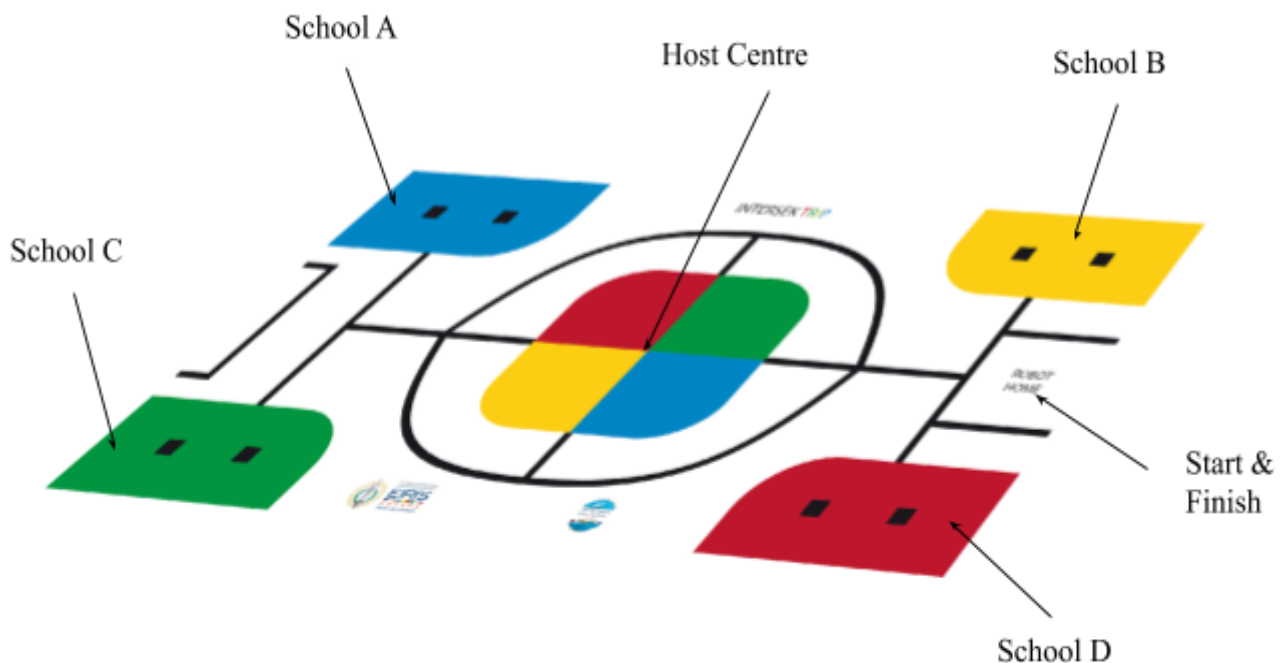
OBJECTIVES:

The challenge is to build a robot that takes students from their different schools to the InterSEK host centre. The robot must travel the board picking up a student from each school and taking them to the host centre in the shortest possible time.





FORMAT:

The challenge will take place on a game board consisting of 4 areas located at the corners that represent four schools: College A (in blue), College B (in yellow), College C (in green) and College D (in red). The central area is divided into four colour sectors that together represent the host centre.

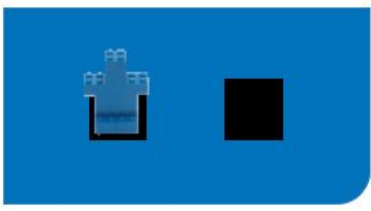
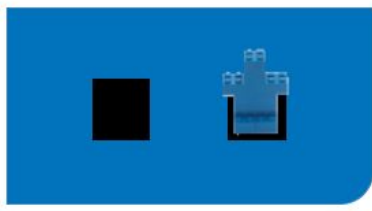
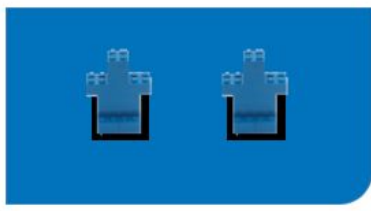
The mission is completed when the robot is within the Robot Home zone.



Students are represented by the following LEGO figures, with two students for each of the 4 schools:

			
School A Students	School B Students	School C Students	School D Students

At the start of the game, the robot must be placed in the Robot Home start zone and in each round, the students will be placed in the black squares of their corresponding school (by colour). One or two students will be placed randomly in each school, and the following three situations may arise:

		
A <u>student on the left</u>	A <u>student on the right</u>	<u>Two students</u>

The board could for example be as follows at the beginning of the round:



The robot's mission is to take a student from each school to the host centre, placing each student in the colour of the corresponding sector.

Taking the initial position shown on the dashboard of the previous image as an example, the correct result should be as follows:



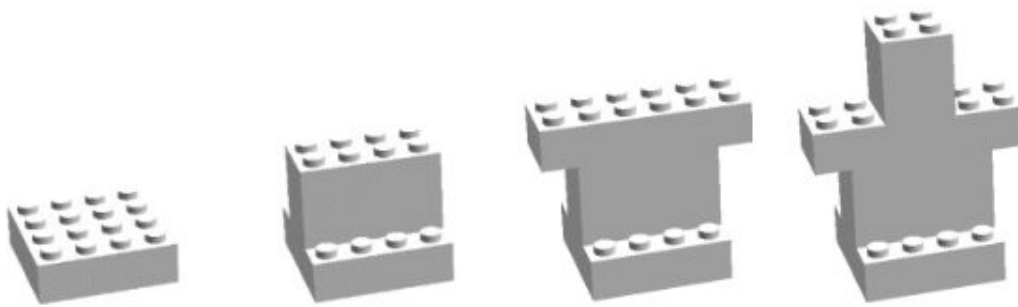
Participating teams must bring their robot mounted, allowing time to test and calibrate it before the championship.

The robot must be built entirely with LEGO NXT or EV3 parts, and cannot exceed the dimensions 25x25x25cm.

The time available to complete the mission is 2 minutes. Time begins when the judge gives the signal. The robot must be placed in the Start zone. Before it starts, no part of the robot is allowed to be outside the Start zone (Robot Home).

There will be between 3 and 5 rounds according to the number of registered participants. Teams will have time to make adjustments, programme and calibrate their robot before each round.

The process for building students is as follows:



EVALUATION:

The classification of the teams is decided according to the best score achieved in a round. If two or more teams get the same score, the ranking is defined by the time recorded.

The maximum score to be reached in each round is 100 points.

Action	Score	Total
Students are correctly placed within their colour sector in the Host Centre.	20 points / student	80 points
The robot ends up completely within the Robot Home area	20 points	20 points
TOTAL		100 points

Other intermediate scores to be taken into account as follows:



Action	Punctuation
Students are correctly placed in the Host Centre, but in a different colour sector.	10 points / student
Students are lying down in the corresponding colour sector in the Host Centre.	5 points / student
Students are partially standing within their colour sector in the Host Centre.	5 points / student
Students who stayed at their home school are lying down or are partially outside of their black box.	- 5 points / student
Students are damaged during the round.	-5 points / student
The robot does not end completely within the Robot Home area	-5 points

The judges will show the penalties by placing red pieces in the penalty area.

NOTE: Board dimensions for printing: 236.2 cm x 114.3 cm.