

Robotics competition

The French School Victor-Hugo in Frankfurt **is organizing** a *robotics* competition on **Wednesday, April 15, 2026**, at the school. (**Address:** Gontardstr. 11, 60488 Frankfurt am Main.)

The challenge consists of designing and building a mobile robot complete a pre-determined track autonomously and in the shortest possible time.



- Three challenges are available, and each robot is allowed to compete in only one track.
- Mobile robots must feature a ***circus-themed body***, qualifying them for a special design award.
- Students, in teams of 2 to 5 people, must justify the technical solutions they considered and selected. For this purpose, they must submit a technical report (digital or paper format) including the following sections :
 - Step 1 - appropriation of the specification
 - Step 2 – research for the solutions
 - Step 3 – realization and tests
 - Step 4 – final presentation.
- **The competition will be held in a multicultural context.** On the day of the competition (**April 15, 2026**), the main language spoken will be French; however, German and English will also be used to accommodate all teams.
Technical reports can be submitted in French, German, or English.

Timeline

From September, 22, 2025

Application files :

- By email with the last page of this document (see below) completed: christophe.bouvet@lfvh.net

January 12, 2026

Pre-registration confirmation: All pre-registered schools will be welcomed. If necessary, the number of participants per school may be limited, but this will be done in coordination with the respective schools. Host family accommodation will be offered to students. We can count on approximately 75 accommodation places. Beyond that, accommodation is available at the Frankfurt Youth Hostel:

<https://www.jugendherberge-frankfurt.de/>

If you have any questions, please contact Christophe Bouvet: christophe.bouvet@lfvh.net

April, 15th 2026

Competition Day

Competition Rules.

Article 1. Technical Requirements.

The project must meet the following requirements::

- The maximum dimensions of the robot are specified for each challenge and must be adhered to (see Article 2).
- The robot must feature::
 - a body with a "circus" theme,
 - an on/off switch.
- The robot must move autonomously without any remote control.
- Combustion engines are prohibited..
- The robot must maintain direct contact with the ground (no flying, hovering, or jumping)
- Store-bought models and modular elements (e.g., Lego, Fischer Technik) are allowed, but participants are encouraged to create their own unique and original designs.



Article 2. Challenges

Reminder : Mobiles will be registered to only one of the following challenges. Theme for the body is « the circus ».

Challenge 1 : Line tracker

This challenge consists in achieving a path materialized by a black line on a white font. A bascule bridge/ a scale must be crossed with an inclination of 7.6 degrees (*see plan below*). The maximal dimensions for the board are 3 meters on 3 (a square).

The line is continuous, 5 cm wide, and has a minimum curvature radius of 10 cm. The line is present at the start of the board. The end line is materialized with a 5 cm large black band, perpendicular to the course line. During the challenge, the mobile is allowed to deviate from the black line if it then returns to it. The mobile has to completely cross the end line and stop in the following 30 cm. At that point there is no more a course line.

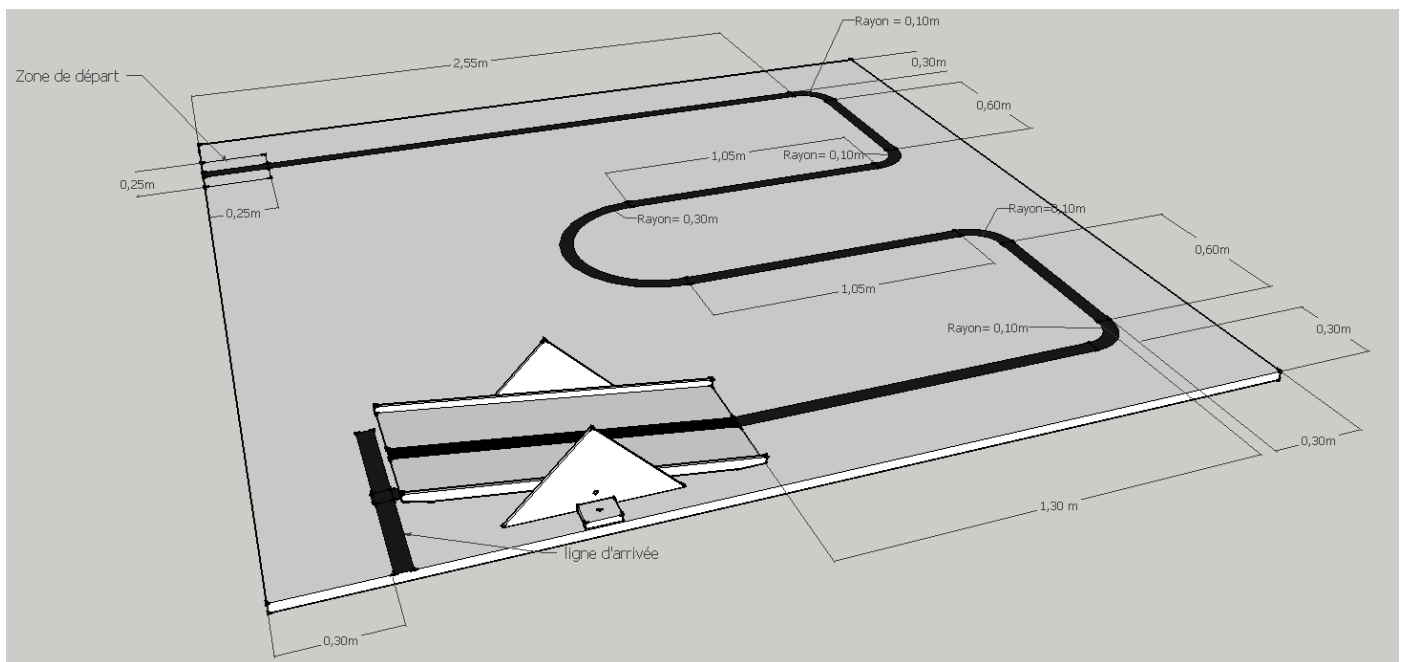
Maximum size of the mobile

Weidht : 20 cm maximum

Lenght : 20 cm maximum

Height : 25 cm maximum

Path board



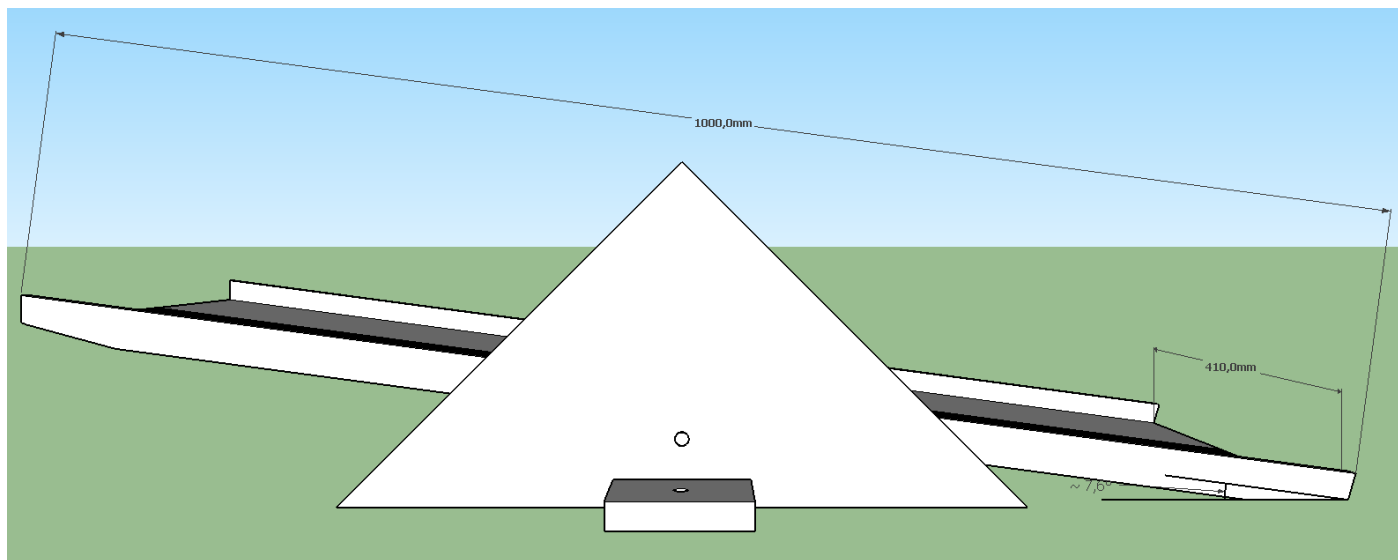
View from above challenge 1



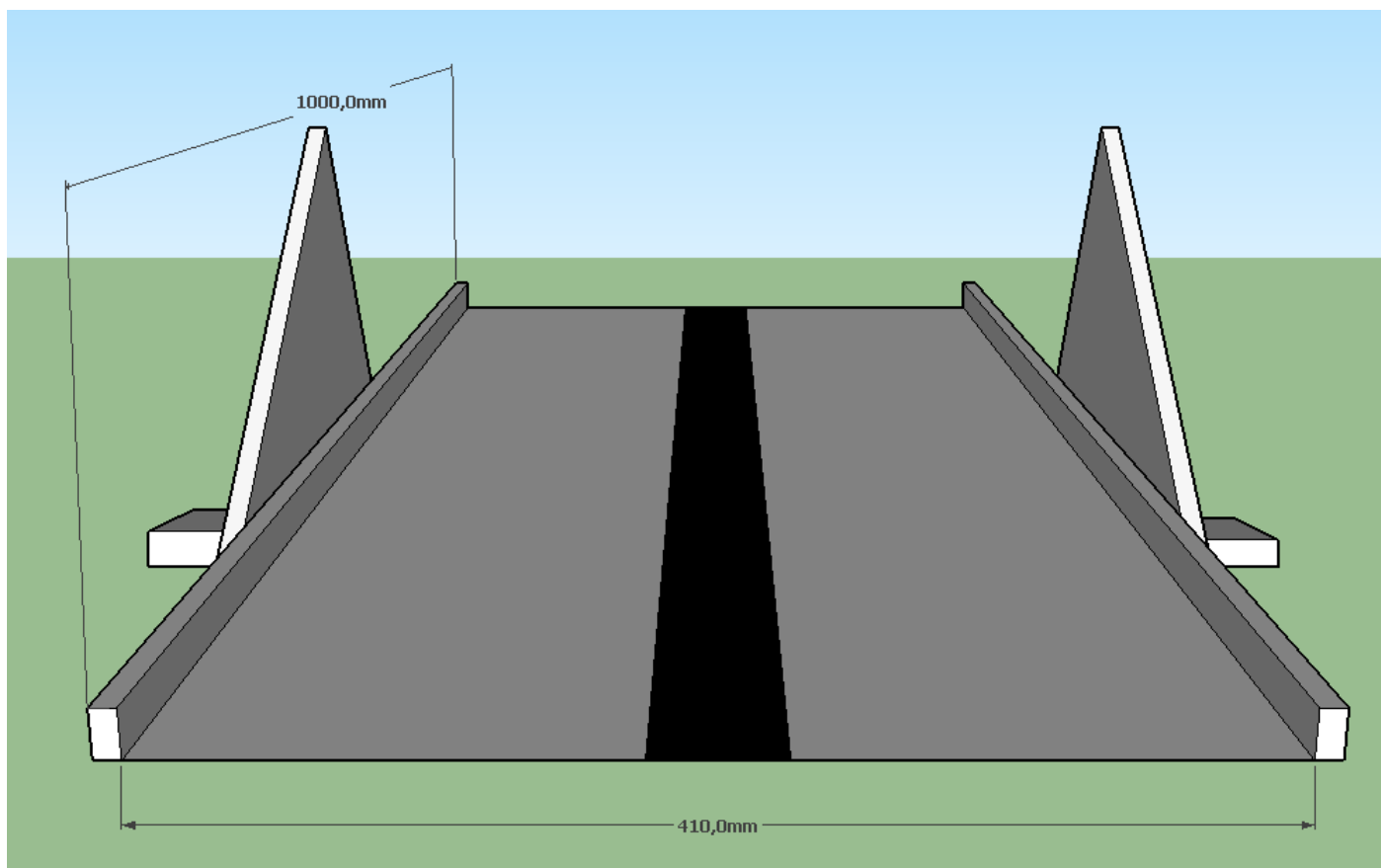
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EN GESTION DIRECTE



aefe
Agence pour
l'enseignement français
à l'étranger



Right view of the bascule bridge



Back view of the bascule bridge



Challenge 2 : Flat racing

The challenge consists in running a minimum of 4,5 meters and a maximum of 5 meters on a flat board, and in a direct line.

No tracks are materialized.

The mobile is placed on the start zone, and at the start signal, it surges forward. It has to stop in the zone of the last 50 cm after opening the two doors materializing the end line. The doors are fixed on hinges and above the ground from 1cm.

The timing counted is the one between the start and the immobilization of the mobile. The board size is 1 meter large.

Maximum size for the mobile

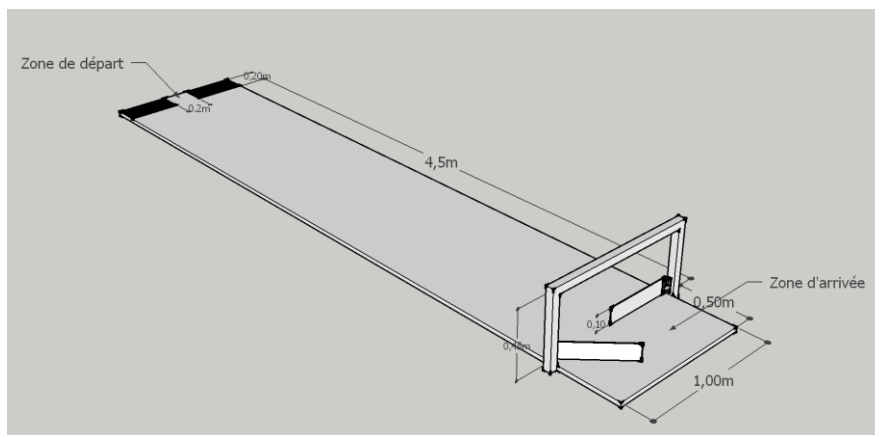
Width : 18 cm maximum

Length : 18 cm maximum

Height : 25 cm maximum

Path board

At the start, the 2 doors are closed.



Perspective view - challenge 2

Challenge 3: Robot Sumo

Two robots face off on a circular black mat bordered by a white line: the 'Dohyô' (see next page). The objective is to push your opponent out of the Dohyô. A robot that leaves without being pushed loses the round.

Maximum size for the mobile

Width : 16 cm maximum

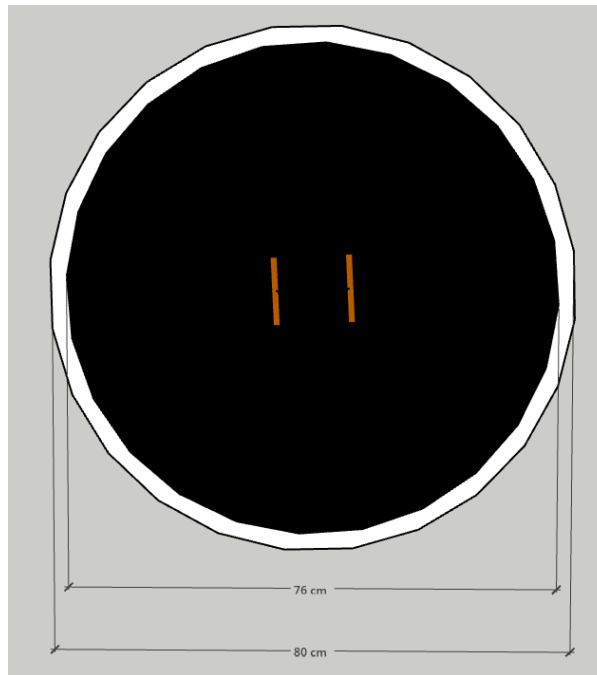
Length : 16 cm maximum

Height : 25 cm maximum

Specific constraints for this challenge:

- No deliberate damage to the opponent is permitted, but tipping the opponent's robot over is allowed.
- It is forbidden to interfere with the functioning of the opponent's sensors.
- No projectiles are allowed (objects, powder, liquid, gas, etc.).
- The robot must not damage the Dohyo.

The Dohyō:

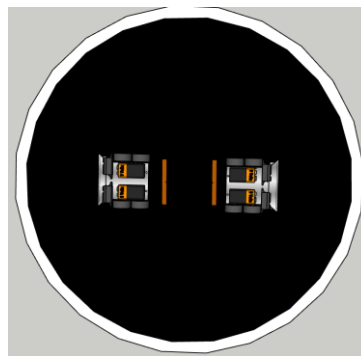


How a fight unfolds:

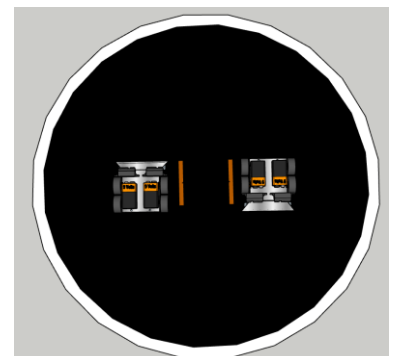
- After activating the start-up system, the robot waits at least 5 seconds before starting so that the students can move away and not disturb the robots.
- No objects or people are allowed within a one-metre radius of the Dohyō, so as not to interfere with the robots' operation.
- A battle between two opponents consists of three one-minute rounds (two winning sets).
- If, after one minute, neither robot has been pushed outside the Dohyō, the most combative robot is declared the winner by the referee. No disputes are permitted.
- At the start, the robots are positioned according to one of the configurations below:



Round 1 (side by side)



Round 2 (back to back)



Round 3 (side by side and at 180° to round 1)

Article 3. How the competition works

The competition will be organised in four stages:

1. Appearance before the homologation, design and technology juries

Homologation jury

Verification of dimensions and the presence of mandatory equipment.

Design jury

The bodywork will be judged according to the following criteria:

- Adherence to the theme
- Creativity of the design (shape, texture, materials)
- Final result
- Originality of the bodywork

A prize will be awarded to the three most aesthetically pleasing bodyworks.

Technology panel

The students will explain how their robot works, justifying their technological choices.

A prize will be awarded to the three teams with:

- The most relevant explanations and justifications.
- The most complete technical file.

2. Tests

Teams will be free to test their robots on the tracks.

3. Qualifications

Each robot will compete in two randomly selected matches. A ranking will be published based on the number of matches won and the time achieved by each robot. The top eight will qualify for the quarter-finals.

4. Knockout matches

For challenges 1 and 2, the fastest robot will qualify for the next round.

For challenge 3, the robot that wins two rounds will qualify for the next round.



Article 4. Organization

- Each team will have to be present at their allotted schedule time, as indicated by the jury.
- A digital or paper file will have to be produced at the start of the accreditation phase. In this file, we will have to find the different phases of conception and realization of the mobile, with the technical solutions researched and adopted.
- Only 2 participants will be accepted on the tracks.
- The whole team will be penalized in the eventuality of the mobile going out of the board.
- The mobile will be set at the starting point and could not be pushed to start.
- The jury's decisions can't be objected under penalty of forfait.
- The organisation team reserve the right to to modify the rules depending on the requirements for a successful conduct of the competition.

Article 5. Prizes

A podium will be established for each challenge, a 'design' prize will be awarded, as well as a prize for the presentation before the technology jury.

More informations on the project

On the school website [Lycée Français Victor-Hugo](#)

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2024 Competition in the news

<https://www.lfvh.net/les-robots-des-jo/>



Pre-registration file for the competition

« La robotique, tout un programme »

Wednesday, April 15th 2026

School :

Address :

.....

City + zip code :

Country :

Telephone :

Email :

One teacher can register several teams of students and chose for each team a different challenge.

Professor(s) Manager(s)	Teacher email	Grade	Number of students for each robot	Challenge choice (cross out the unnecessary mention)
				Challenge 1 Challenge 2 Challenge 3
				Challenge 1 Challenge 2 Challenge 3
				Challenge 1 Challenge 2 Challenge 3
				Challenge 1 Challenge 2 Challenge 3
				Challenge 1 Challenge 2 Challenge 3

Accommodation in host families for students is available under the following conditions:

- Arrival at the school no later than **6:00 PM on Tuesday, April 14.**
- Departure from the school after the competition or on **Thursday, April 16**, no earlier than **7:45 AM.**

Our capacity for family accommodation is approximately **75 places.**

Will you require family accommodation? **Yes / No**

Please pre-register by **12 January 2026** by submitting this form to the following address:

christophe.bouvet@lfvh.net

