PHOTON CHALLENGE

PARTICIPANTS

1. Participants may compete individually or in teams of no more than 2 members.
2. Teams must register by the deadline set by the organizers.

CATEGORIES

1. Participants are divided into two categories:
a) Students in grades 1–2;
b) Students in grades 3–4.
2. If a team consists of two students from different grades, it is assigned to the category of the older team member.
3. Depending on the number of participants, the organizers reserve the right to combine these categories. Any changes will be announced before the competition begins. If the categories are combined, all teams will complete the same task and be assessed using the same criteria.

REGISTRATION

1. To register for the Photon Robot Challenge, please send the completed registration form to simona@robo-labas.lt.
2. The registration form is available here: https://shorturl.at/6c6Cd
3. Registration is confirmed once you receive a confirmation email from the organizers.
4. Each institution may register only one team.

EQUIPMENT

1. The competition uses the educational robot "Photon" (Figure 1). Panevėžys Robotics Centre "RoboLabas" will provide each team with a robot, a tablet for controlling it (with the same app version), a mat and any other equipment needed to complete the task. Only equipment and materials provided by the organizers may be used during the competition.
2. The competition will use the "Photon Coding App" and the "Photon Badge" programming environment.
3. The robot's step length is 30 cm, preset by the organizers.

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Figure 1. "Photon" robot.

COMPETITION FIELD

The mat consists of 24 equal squares (30 × 30 cm), arranged in 6 columns and 4 rows. The columns are labelled A to F (from left to right), and the rows are numbered 1 to 4 (from top to bottom). Each square is identified by a letter and a number, such as A1, C3 or F4.

The mat layout is shown in Figure 2.

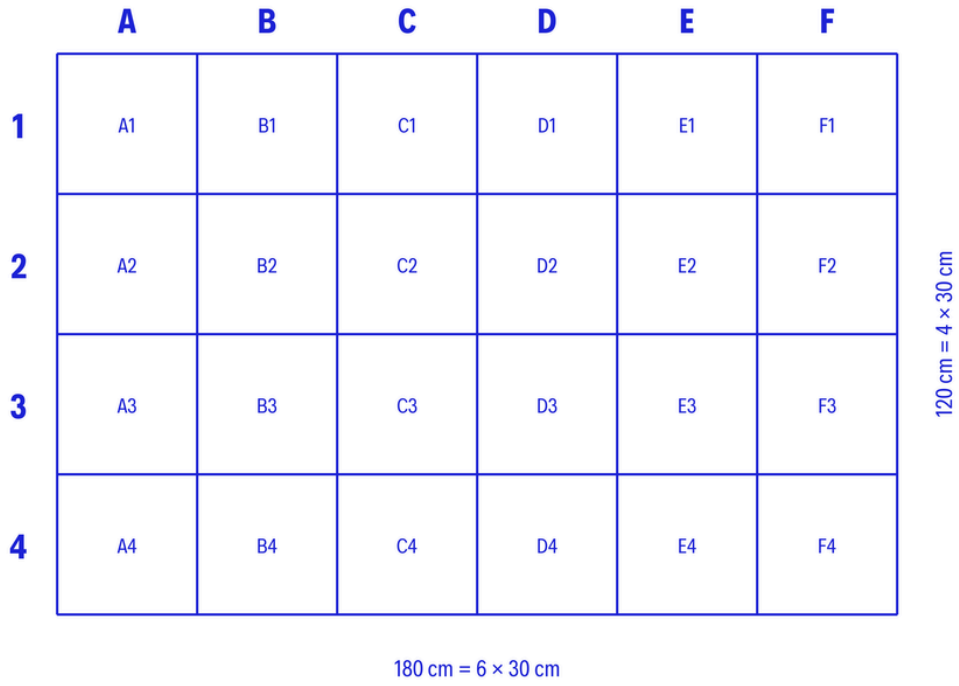


Figure 2. Mat layout.

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TASK

1. The competition task will be announced on the day of the event.
2. The task involves programming activities and may also include mathematics and logic challenges.

PREPARATION

1. Up to 4 teams may complete the task at the same time.
2. Before the competition, the judge will give a short introduction on how to use the "Photon" robot. Each team will have 5 minutes to test the robot before the competition begins.
3. The introduction and the 5–minute testing period are not included in the 15–minute task time.
4. Teams starting at the same time will receive their task sheets together. The judge will explain the task.
5. Before the start, teams may ask questions about the task requirements and scoring. Programming and testing solutions are only allowed after the starting signal.

TASK COMPLETION

1. Teams have 15 minutes to complete the task.
2. Time starts after the task has been explained and the judge gives a common starting signal.
3. The completion time is recorded to the nearest second when the team hands in its task sheet to the judge.
4. After 15 minutes, the judge gives the end signal. Teams must stop working and hand in their task sheets to the judge. Only tasks completed before the end signal will be assessed, and the team's recorded time will be 15:00 min. Any robot actions performed after the signal will not be assessed or awarded additional points.

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SCORING AND RESULTS

1. The team with the highest number of points wins.
2. If teams have the same number of points, the team that completes the task in less time ranks higher.
3. If teams have the same number of points and the same completion time, an additional task will be given to determine the winner.

ASSISTANCE AND VIOLATIONS

1. The judge may provide assistance only in the event of technical problems with the robot or its control device.
2. Teachers, parents and other outside persons are not allowed to help teams complete the task.
3. If a team receives help from outside persons, the following penalties apply:
   - First violation – a warning;
   - Second violation – 1 point deducted from the total score;
   - Third violation – disqualification.

TECHNICAL ISSUES

1. Teams must immediately report any equipment failure or connection issue to the judge. If the judge confirms that the issue was beyond the team's control, the team's timer will be paused, the equipment will be repaired or replaced, and the task time will be extended by the duration of the technical issue.
2. Programming errors are not considered equipment failures.

ORGANIZATION

1. Teams competing in the same category but starting at different times are not allowed to observe other teams completing the task.
2. Any concerns about the results must be raised with the judge immediately after the assessment and before the results are confirmed. Disputes are resolved by the chief judge and/or the organizers in accordance with the published rules.