

STEM4youth Open Student Competition rules

Contest organizer – the STEM4youth project consortium

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General information

STEM4youth invites students and their teachers from secondary and high schools across Europe to join the STEM4youth Competition and work on one of the proposed multidisciplinary problems.

The STEM4youth Competition is open to teams of 3 secondary or high school students (age 15 to 19), assisted by their teachers as mentors. Participating teams can come from secondary or high schools in the European Union or in the Candidate Countries (Albania, Macedonia, Montenegro, Serbia and Turkey)

The main prize of the competition is a scientific trip to CERN, the European Organization for Nuclear Research. Young students who are fascinated by disciplines such as Mathematics, Physics, Chemistry, Astronomy, Technology, Engineering, Medicine and other STEM sciences will have the opportunity to visit one of the largest physics laboratories in the world where the most powerful particle accelerators are used to answer the questions: what is the Universe made of and how did it start? Each student will be accompanied by his/her teacher during the trip.

Solutions of the competition problems will be submitted online using the <https://olcms.stem4youth.pl/> portal before 10th of April 2018 (by 5:00 PM).

Three teams (3-person each) can win the main prize and will be invited for a one day trip to CERN. Each student and her/his assisting teacher will get a lump sum scholarship of 500 Euro to cover their travel and accommodation costs (provided that both the student and her/his teacher will participate in the trip).

Who can join the competition?

1. Teams from secondary or high schools from the European Union or EU Candidate Countries

2. A team consists of 3 students (the students could be from the same school/country, but international teams will be preferred). Additionally, each student has to be supported by a mentor, who is a teacher at his/her school (the teacher does not necessarily have to be the student's teacher at the moment).
3. One teacher could mentor many students from the same of different teams)
4. Each team has its leader – the student responsible for carrying out a part of the task and for coordination of the team work.
5. One team can submit only one project.
6. The teacher does not necessarily have to be the student's teacher at the moment. However, he/she must be employed at the same school.
7. The students and the teachers from the winning teams will be invited to participate in the event and the teachers will be responsible for the students' wellbeing during the trip.
8. The student must be between 15 and 19 years old (at the moment the work is submitted).
9. The students and teachers have to be able to communicate in English.
10. Before submission the teacher – the mentor of the team leader – must get the written, signed consents of the students, whose work he/she submits for the competition within the STEM4youth project. In case of minors the written, signed consents of the students' legal guardians must also be obtained by the teacher ([Student consent form](#), [Under aged Student consent form](#)).

Project The students select one of the following topics to work on:

- a. From Physics to Economics: the versatility of the exponential function ([link to the detail description](#))
- b. Science in 3D ([link to the detail description](#))
- c. Air pollution analysis ([link to the detail description](#))
- d. LED torch spotlight ([link1](#) and [link2](#) to the detail description)

Depending on a particular topic, the students should follow specific instructions provided in the problem description regarding the format and requirement the work should meet.

Prize: Visit to European Organization for Nuclear Research (CERN)

During the visit winner teams will have the possibility to present their projects in front of other teams, organizers and jury. Also, during the visit, a guided tour of CERN facility is foreseen. The tour will consist of watching an official CERN introductory movie as well as visiting two or three points of interests (the points are still to be decided). One of the points will be a visit to the NA61/SHINE experiment.

Expected date of an event

June the 12th 2018

General evaluation criteria

Depending on the particular activity type the projects will be evaluated according to the following general criteria:

1. Correctness of the solutions to the problems posed.
2. Quality, consistency and depth of reasoning and formulation, verification and generalization of hypothesis and conclusions.
3. Clear description of the steps/tasks carried out in the project and of the obtained results.
4. The effectiveness of cooperation in the team, level of integration of team member contributions.
5. National and gender diversity in the project team.

The process of evaluating the projects of STEM4youth competition

Stage 1: Solution of the problem must be submitted before 10th of April 2018 5:00PM (CET). Based on the work the jury will select up to of the 10 best projects to continue to stage 2 of the evaluation.

Stage 2:

- a) The 10 (or fewer) best teams will be invited to online interviews to present their projects in detail to the jury (between 23rd and 29th of April 2018)
- b) The summary of each of the best projects will be published on STEM4youth webpage and on the Open Learning Content Management System (OLCMS, <https://olcms.stem4youth.pl/>). After that the registered users of OLCMS will vote for the best project.

Stage 3: The jury will announce 3 winning teams who will be invited for the scientific trip to CERN

Please note: The competitors will be notified if they qualify to the 2nd stage or not. No other feedback will be given to individual projects.

Important note about copyrights

- 1) A summary of each project submitted to the STEM4youth competition may be published on the website (and on the OLCMS). This means that the project summary will be publicly available and everyone will have access to it. Be careful not to use sensitive information and images that you do not want to be made public.

- 2) **We will be careful not to describe any part of the project in a negative way.**
- 3) The mentor of the team leader is responsible to ensure that all rights to the content in the project are respected and necessary permissions are in place, so the project summary can be published on the website.

Submission guide for the STEM4youth competition

1. All the project materials must be submitted electronically on the portal by the teacher – the mentor of the team leader. All team members will be notified after the submission.
2. All project materials must be prepared in English. English is the official language of the Competition.
3. Information to include:
 - a. Students' names
 - b. Student's ages
 - c. Students' e-mail addresses
 - d. The team leader mentor name /e-mail address
 - d. Scans of signed students' /parents' consent forms
 - e. Countries of residence of the team members
 - f. The competition topic
4. Problems. Each team can choose one of the problems published on the STEM4youth competition problems list:
 - a. From Physics to Economics: the versatility of the exponential function ([link to the detail description](#))
 - b. Science in 3D ([link to the detail description](#))
 - c. Air pollution analysis ([link to the detail description](#))
 - d. Led torch spotlight ([link1](#) and [link2](#) to the detail description)

Depending on the problem chosen you will be expected to provide solutions to a given task, prepare a video, write an essay or carry out an analysis (details requirements will be provided in each of the problem descriptions).

6. File limits and acceptable formats.

There is no formal page limit on the report, however, the project summary must be max 1500 characters (+ illustrations, pictures or similar). The total volume of all files submitted by one team should not exceed 55 MB.

The project summary should be PDF. The project may be or PDF or ZIP file.

The student consent forms must be PDF (scan of signed document saved as PDF)

Larger files (like video) can be may be submitted as links to free, publically available, file repositories (like YouTube) provided that no authorization or account creation is required to access the file.

7. **Summary.** Write a clear summary of your project using maximum 1500 characters. The summary should include either main conclusions from solving the problems, or shortly describe the ideas you proposed. The public will vote on the best team based on the project summary.

Final provisions

- a) The competition is organized on the territory of the Republic of Poland.
- b) The competition is not a game of chance, a raffle, a mutual bet, a promotional lottery, a game whose outcome depends on the chance or any other provided in the Act of 19 November 2009 on gambling (Journal of Laws of 2016, item 47, as amended).
- c) Participation in the competition is free and voluntary.
- d) Participation in the competition is tantamount to consent by the persons taking part in the competition submitted as part of the Participant's team for the Organizer to process their personal data for the purposes of the Competition, in particular for public names and surnames, in accordance with the Act of 29 August 1997 on protection of personal data (Journal of Laws of 2014, item 1182).
The organizer informs that in accordance with art. 24 section 1 point 3 of the Act, every person referred to in paragraph 1, has the right to inspect their personal data and correct them.
- e) In the case of changing the contact details, the applicant is obliged to notify the organizer immediately, under pain of the organizer's liability for the consequences of non-delivery of the correspondence related to the competition.
- f) In matters not covered by the Competition Rules, the relevant provisions are generally applicable.
- g) The competition is financed by the STEM4youth project.
- h) The organizer reserves the right to modify the provisions of the Competition Rules at any time for important reasons.
- i) Disputes related to the Competition will be considered by the Organizer, and its decisions in this respect will be binding and final. In particular, the Organizer is entitled to publish explanations regarding the provisions of the Regulations presented by the Participants until February 28, 2018. After this date, explanations will not be given by the Organizer.