

Important information about applying

Maths Beyond Limits 2018

1 April 2018

1 Qualifying Quiz

Qualifying Quiz (QQ) is the major part of the application. You can access it from [our website](#). **We accept solutions only in pdf, doc/docx or scans in jpg/png formats.** They can either be scans of handwriting (provided it is legible!) or typed in L^AT_EX or something else.

Do not get upset if you find the problems difficult as they are meant to be demanding, thought-provoking and getting the best out of you. Also, do not hesitate to submit just partial solutions as sometimes they may be very near completion.

You can use books or the Internet to look up definitions or formulas, but do not try to look for the problems themselves! In case the problem statement is unclear to you even after getting help from the aforementioned sources, please contact us via mathsbeyondlimits@gmail.com. You may not consult or get help from anyone else. Violation of any of these rules may permanently disqualify you from attending Maths Beyond Limits.

On our [Facebook fanpage](#) we will publish a video about Qualifying Quiz.

2 Applicant Questionnaire

Applicant Questionnaire (AQ) consists of sections A, B, C, D and a personal data processing consent form for all participants and semitutors as well as section E only for semitutors. After submitting the form, you are still able to edit it, until (and including) **30 April 2018**, which is the deadline. Also, after your submission you should get a confirmation email containing the copy of your answers.

Applicant Questionnaire is available as a Google Form [here](#).

We suggest that you first prepare and save the answers to the questions from AQ in some separate document and then copy-paste them into appropriate boxes. This may be especially helpful if your internet connection is not too great.

2.1 Personal Details

Section A of Applicant Questionnaire asks you to provide your personal data. The questions with our comments are put below.

- *First name:*

- *Surname*:
- *Date of birth*: Please be careful not to set your year of birth as 2018.
- *Country*: Please use the English name of your country.
- *Name of the school*: Please use the official name of your school in the original language. E.g.: "XIV Liceum Ogólnokształcące im. Stanisława Staszica w Warszawie" instead of "Staszic" or any translation.
- *Expected high school graduation year*:
- *Postal address (with zip code)*: Please give your address in the original language.
- *Telephone number (with country code)*: Please give it in the form "+48600600600", with a plus in the beginning and no spaces between the digits. Also, make sure it is correct as in case of urgent matters concerning the recruitment process we will probably give you a call.

2.2 Personal Statement

In **Section B** we ask you to tell us something about yourself (especially in the mathematical context).

Some of the ideas of what to write about are the following: How did you become interested in mathematics? How do you develop your mathematical passions? Are there any people that influenced you largely on your mathematical journey? What branches of mathematics do you like most? Why? What branches, topics are your weak spots? Have you read any mathematical books you find exceptionally intriguing? Which ones? What is the most beautiful problem you've ever solved? Is there any particular problem (not some well-known hypothesis), whose statement you understand, but which you cannot solve? Tell us about some other hobbies you have (e.g. skating, crocheting, knitting, watching anime).

There is no minimal or maximal length of the Personal Statement, but you should bear in mind that its purpose is for us to get to know you, so please allow us to do so!

There will be a video on our [Facebook fanpage](#) about that stuff!

2.3 Competitions & Achievements

Your results in olympiads and mathematical contests are not the most important point in the application, but we do want to know about them! **Section C** is there for you to tell us about your academic achievements.

In cases of most well-known competitions (those fitting under the given categories: *International Mathematical Olympiad*, *International selection-based competitions*, *National Mathematical Olympiad*) you can just write the contest's name and the edition in which you participated as well as the result (e.g. "silver medal" or "laureate"). In cases of less known contests, please give us a short description of the contest and the name of the contest in the original language.

2.4 Evening Activities

Section D allows you to propose up to three Evening Activities (EAs), which are non-mathematical activities happening every evening, about 45-120 minutes long. Most of them are run by the participants themselves. Proposing them is not obligatory, but it is definitely very beneficial, as we do take the proposals into account a lot! We want the camp to be filled with super-cool events and you can be one of the people contributing to that!

Some of the ways to make a good EA, together with examples from previous MBLs are below.

- Make it an introduction into some not-so-popular thing that you are interested in.
e.g.: [Chinese language](#), [improvisation workshops](#), [handstands and more](#), [singing workshops](#)
- Make it a really random and funny thing.
e.g.: [mushroom picking](#), [recognition of old mobile phones quiz](#), [Spelunky tournament](#), [kebab making](#), [pique turns](#)
- Make some interesting vintage thing.
e.g.: [Donnie Darko: movie + discussion](#), [introduction to Swedish cinematography](#), [Crêpes artistiques](#)
- Make it some classic group integrating thing.
e.g.: [karaoke](#), [vast range of quizzes](#)

To get more good ideas do check out last year's [camp brochure](#). There will also be a video about Evening Activities where authors of some most successful ones are interviewed — it will be published on our [Facebook fanpage](#).

There are also things you should avoid when proposing an EA.

- Avoid giving proposals that are somewhat trivial and do not require any preparation (in particular just some specific board/card game).
e.g.: [card games](#), [board games](#), [FIFA](#), [MAO](#), [SET](#), [Mafia](#)
Some way to make such proposals better is to do them in the form of a tournament or workshops (where you actually teach some techniques) and make them more specific and creative.
e.g.: [contract bridge workshops](#)
- Avoid activities that will certainly not take 45 minutes.
e.g.: ["Kalambury"](#), [puzzle](#)
- Avoid activities that are organised as Special Events (look it up in [camp brochure](#)).
e.g.: [mountain trip](#), [bonfire](#)
- Be aware of the restrictions that the accommodation has. We do not have any ovens, lakes, old abandoned uranium mines etc. We do have a projector, lots of cardboard, a tourist cooker and a forest nearby. If you want to propose something that has special requirements either ask us if it is a good idea or be prepared to provide the materials you need.
e.g.: [making cookies](#), [table tennis tournament](#)
- Do not propose just sports. If you want to propose a sport-connected activity make it somewhat more involved.
e.g.: [frisbee](#), [sports](#), [football](#)

- Do not propose just film screenings. If you want to propose a movie-connected activity make it somewhat more involved.
e.g.: [Flatland watching](#), [movie night](#)
- Do give good description of your proposal, not some vague title.
e.g.: [ice-breakers](#), [circle activities](#)

A good EA proposal can look like this:

IMPROVISATION WORKSHOPS - being a member of a youth theatre I would like to give the other participants a feel of what doing theatrical improvisation is like. I want to do a few fun exercises increasing the body-awareness, creativity in imagining unexpected turns of random situations and the confidence in improvising. Most of them will be group activities so it should help the participants to integrate. It would be great if I could be provided with speakers and some big room.

Also, in the first two editions we had some EAs group proposals. If you and some of your friends are applying you can propose an EA together! However, we require the groups to be no bigger than three persons. In order to do so, all of you should put an identical proposal and make a note saying which persons are in your group.

Note: Be aware that proposing an EA means you are willing to organise it when accepted (but does not mean we will for sure ask you to do so).

2.5 Camper Talks

Camper Talks are 25 minute long presentations given by campers. They should tell about some mathematical or maths-connected phenomenon in a swift and light way. Again, they are not mandatory but can serve you a big favour when your application is assessed.

To get more good ideas do check out last year's [camp brochure](#). There will also be a video about Camper Talks where an author of a Camper Talk from last year is interviewed — it will be published on our [Facebook fanpage](#).

Here is an example of a description of a Camper Talk:

RANDOM WALKS ON GRAPHS - In the talk we try to calculate average time it would take to walk (randomly) from given vertex A to another given vertex B on various graphs and then derive the general formula.

Note: Be aware that proposing a Camper Talk means you are willing to give it when accepted (but does not mean we will for sure ask you to do so).

3 Semitutoring

Being a semitutor at MBL means running yourself at least one full time (three-day-long, 80 minutes each day) Mathematical Class (MC). You will be asked to prepare handouts well before the camp and also to practise your class with an experienced mentor. We ask you to give some classes proposals in **section E** — if we choose any of them you will become a semitutor. If you do not get accepted as a semitutor we will consider your application as a regular participant.

Again, we encourage you to take a look at the MCs from last year in the [camp brochure](#). It is also there that you can find some handouts from the classes — they should give you more insight into how MCs are run. There will also be a video about semitutoring where semitutors from last year give some advice — it will be published on our [Facebook fanpage](#).

When thinking about a good MCs proposal you should consider these factors:

- Think about topics you understand. It can be fun to learn new things and then tell others about it, but on the other hand it is unpleasant for the audience when the lecturer is trying to figure out the proof during classes. You cannot properly teach what you have not understood yet.
- Choose something you are passionate about. Everybody likes seeing people talking about things they are truly keen on.

A good Mathematical Classes proposal can look like this:

COMBINATORIAL GEOMETRY - Combinatorial geometry is a mixture of interesting mathematical areas such as geometry, topology, combinatorics and algebra. Most of the problems are easy to understand but the solutions require some clever ideas. For example, a typical question would look like this. Can you always cut a cake into six parts, such that each part has the same amount of candles on it? What if you can only use your knife three times? We will work through some problems to understand the basic definitions and ideas, and I will also talk about the active research areas in this field. The class requires just the basic understanding of euclidean geometry.

4 FAQ

4.1 How much does the camp cost?

The first two editions of the Maths Beyond Limits camp were free for the participants. This year, however, we cannot guarantee that yet. Therefore we may ask participants to pay the fee of up to **150€**. In special cases we may provide financial aid, which is to be discussed individually upon acceptance.

Note: We are still looking for sponsors and waiting for the grant results, so most probably the camp will turn out to be free. Financial issues should not deter you from applying!

4.2 I am from country X. Can I apply?

Yes! People from all over the world can apply!

4.3 I am 14 or 20 years old. Can I apply?

The camp is aimed for students aged 15–19. The most important requirement is that when applying you **must** be a middle/high school student. We can make some exceptions for younger and older students only if they satisfy this condition.

4.4 There is school in September...

We are aware that in many countries school starts during or before MBL. In the previous years we wrote excuse letters of absence to the headmasters or class counsellors and none of the applicants resigned because of school. We will do as much as we can to assure that there are no problems this year either.

4.5 I have a technical problem with the website.

Email us at mathsbeyondlimits@gmail.com.

4.6 I have another question.

Maybe you can find the answer in one of the vlogs, on our website or Facebook fanpage. If not, feel free to email us at mathsbeyondlimits@gmail.com!