

FotoGebra Contest history

The contest was an original idea and initiated by Prof. Karina A. Rizzo, a native of the city of Quilmes, province of Buenos Aires (Argentina).

Since 1993, Karina has carried out various activities with her students, with the use of photographs and mathematics, including organizing exhibitions of photographs intervened with mathematical objects, where the protagonists told the attendees about their learning with said activity.

Starting in 2013, Karina carried out practical work with her students that included taking a photograph and modeling it with the GeoGebra software (for example: <https://www.researchgate.net/publication/357969718> Una alternativa para la motivacion y la visualizacion de la matematica en lo cotidiano).

In 2016, after carrying out various activities that included the use of GeoGebra and observing the students' enthusiasm for using the applet and photographs, the teacher designed and implemented the 1st "Mathematics, photography and GeoGebra" Contest. aiming for students to be able to mix the quality, beauty and "mathematicality" of the photo with software development. This contest was chosen to be called FotoGebra, as it combines photography and the free software GeoGebra, whose motto was "Capture a mathematical concept with your photo, if you can...".

The first contest was carried out with the participation of students from the Instituto Nuestra Señora del Perpetuo Socorro and the Instituto Sagrada Familia, both institutions in the district of Quilmes (go to 2016 edition), Province of Buenos Aires (Argentina).

In this first edition, 50 participants from both schools applied (the story of this experience can be found at: <https://www.researchgate.net/publication/353131964> Concurso-Matematica-Fotografia-y-GeoGebra-Una-propuestapara-mejorar-la-imagen-de-la-matematica or

<http://www.oei.es/historico/divulgacioncientifica/?Concurso-Matematica-Fotografia-y-GeoGebra-Una-propuesta-para-mejorar-la-imagen> and in

https://www.ugc.edu.co/sede/bogota/documentos/investigaciones/panel/geogebra_2016.pdf)

In the second edition, carried out during 2017, the aim was to continue improving Mathematics learning for Secondary Level students. This time, there was support for the spreading announcements and evaluation of works from the GeoGebra Institute of La Plata and registration was opened for all students of secondary education institutions (SE) in the province of Buenos Aires from the regions. from Quilmes, Berazategui, Florencio Varela, La Plata and its surroundings.

At the request of several interested parties, in 2018 (third edition), two more categories are incorporated, to give rise to the participation of students from Teacher Training Institutes and works from any province of the Argentine Republic are accepted, obtaining excellent results again, both in terms of the great participation and the mathematical work carried out by them (The works presented can be accessed here: <https://www.geogebra.org/u/fotogebra>).

In 2019, noting the acceptance of the initiative and with the help of Agustín Carrillo de Albornoz Torres, who had been a member of the jury since 2017, the proposal was extended to all Latin American countries, including Spain and Portugal.

(https://fido.palermo.edu/servicios_dyc/publicacionesdc/vista/detalle_articulo.php?id_libro=821&id_articulo=17035)

In 2020, due to the pandemic and the conditions that are publicly known, it was decided to launch a new edition, but this time in virtual format

(<https://revistas.ucr.ac.cr/index.php/cifem/article/view/48502>)

Isolation forced us to generate various strategies in order to sustain the exchange and educational continuity with students and FotoGebra could not be left out of this. Therefore, all the activities that had already been proposed were reformulated and new ones were created.

First, it began with the design of classroom activities, seeking to provide resources for teachers who were in practice and who were suddenly forced to carry out their classes virtually. These activities to work with students are hosted both on the contest website

(<https://www.fotogebra.org/activityes-para-el-aula>) and on the official GeoGebra profile (<https://www.geogebra.org/m/kmkajvhh>) and you can work with them online or download, to reuse, share or modify according to the context where it will be taken.

In addition to this, workshops began to be held as in previous years, but this time through various virtual platforms, with free access (<https://www.fotogebra.org/talleres>).

The workshops were broadcast live on the contest's YouTube channel

(<https://www.youtube.com/c/FotoGebraRizzok>) and are hosted there for free access. Additionally, in it, you can find short and very educational videos, as tutorials, that will allow you to get started in using GeoGebra and/or explore the different tools that this software offers and learn how to use them.

Starting in 2020, and as a result of widespread sharing on social networks, informative talks, conferences and workshops, the proposal was extended to various countries, becoming today an international competition that brings together students and teachers of all educational levels.

During these years, the institutions where the teacher works (Higher Institute of Teacher and Technical Training No. 24, INSPS, ISF, UTN. FRA), provide the space for carrying out some workshops, awards events and various activities inherent to the contest.

Likewise, it should be noted that various activities have also been carried out in other public and/or private locations that kindly offer a place for this. For example, in 2019, the year in which the contest was recognized as an event of interest by the municipality of Quilmes, the IV edition was launched at the "Municipal Theater of Quilmes" and the award ceremony and presentation of distinctions in "The House of Culture of Quilmes".

Regarding the institutions that support and spreading announcements the contest and discounting those in which the teacher works, we had the satisfaction of being supported by the OEI from 2018 to 2022; by IMAPEC, FISEM AND SAEM THALES from 2018 to the present; CIAEM and REDUMATE, from 2019 to the present and by the GEOGEBRA INTERNATIONAL INSTITUTE since 2020.

In addition, FISEM, SAEM THALES AND THE GEOGERBA INTERNATIONAL INSTITUTE collaborate by donating the prizes to the winners.

From the beginning of the project until now, there is no institution that finances it, it is carried out thanks to the creator who arbitrates the means to make all the instances of the contest possible, and to those who kindly carry out dissemination, workshops and/or or evaluate works.

Regarding the latter, you can access the list of collaborators at the following link:

<https://www.fotogebra.org/colaboradores>

What is FotoGebra?

This free, free contest with educational purposes only, called FotoGebra (www.fotogebra.org), as it combines photography and the free software GeoGebra, is held annually and challenges participants to observe their surroundings with mathematical eyes, inviting them to discover that mathematics is implicit in everything that surrounds them.

The activity consists of participants, starting from a photograph, designing a problematic situation that involves them and then inserting themselves into the GeoGebra Graphic View, mathematically modeling said situation, solving the mathematical problem and interpreting it based on what is proposed.

The objectives of the contest are:

- Awaken students' interest in mathematics.
- Promote mathematics learning through the use of GeoGebra.
- Relate the contents of the area with the surrounding reality.
- Work on mathematical modeling from everyday life situations, represented in this case through photography.
- Promote the development of mathematical problem-solving skills.
- Stimulate creativity and the ability to express oneself.
- Promote teamwork.

In summary, this initiative aims not only to highlight the characteristics of the program but also to awaken the creativity of the participants to design problematic situations and also to discover the potential of GeoGebra to work on mathematical modeling.

To evaluate the productions submitted by the participants, several specialists in the subject are summoned, who make up the jury.

The committee evaluates the works presented, according to criteria established in a rubric. The authors of the works selected by the court become the winners.

In addition, two photographic exhibitions are held: one physical (when the context allows) and the other virtual (social networks). The public can vote, according to their own criteria, for their favorite works, and the winners in this case receive a “special mention.”

The bases of the contest:

You can participate in the following categories:

Category 1: 1st, 2nd and 3rd ES students.

Category 2: 4th, 5th and 6th ESS students.

Category 3: 1st and 2nd year students Teacher Training (Teachers)

Category 4: 3rd and 4th year students Teacher Training (Teachers)

Category 5: FREE

The works in category 1 and 3 refer to “Geometry” and those in categories 2 and 4 refer to “Functions”. Those in category 5 can choose a theme.

The work must be carried out by groups of up to 3 people. The same person may not belong to more than one group.

The people on a shortlist must belong to the same category.

Each group may present a maximum of 3 works.

These bases are published on a site that participants can access through the following link

<https://www.fotogebra.org/bases-y-conditions>

Once all the stages of the contest and evaluation have been completed, the award ceremony takes place in person until 2019 and virtually/hybrid from 2020, which consists of a certification and a symbolic present. This marks the end of the contest, and participants are invited to take part again the following year.