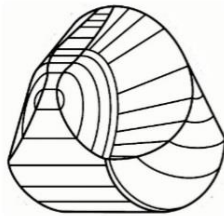


# **GAAC 2025**

## **ANALYSIS ON GEOMETRIC ABSTRACT ARTS COMPETITION**



**BRAINSTORMER  
FOUNDATION**

CREATING SENSE OF MATHEMATICS

## Table of Contents

Table of Contents .....	i
List of Figures.....	ii
List of Tables .....	ii
1 Introduction .....	1
1.1 About GAAC-2025.....	1
1.2 Design of the competition .....	1
1.3 Objectives of the analysis .....	1
2 Analysis .....	2
2.1 General .....	2
2.2 Gender & Grade.....	2
2.3 School categories .....	3
2.4 Administrative divisions .....	5
2.5 School .....	8
3 Conclusion .....	12
References .....	13

## List of Figures

Figure 1- Contribution from different grades for the competition .....	3
Figure 2-Participation from different school categories .....	4
Figure 3- Provincial analysis of Participants .....	5

## List of Tables

Table 1-Gender composition of the competition .....	2
Table 2-Participation and achievements from each Grade.....	2
Figure 1- Contribution from different grades for the competition .....	3
Table 3- Percentage contribution from different school categories .....	3
Figure 2-Participation from different school categories .....	4
Table 4-Participation with respect to student population of each category.....	4
Table 5- Participation from each province for the competition .....	5
Figure 3- Provincial analysis of Participants .....	5
Table 6- Winning percentage of each province .....	6
Table 7- District wise participation .....	6
Table 8- Educational zones with more than 10 participants .....	7
Table 9- Schools with participation above 10 students .....	8
Table 10- Schools with at least 2 selected to second round.....	9
Table 12- Schools with 100% winning percentage.....	10

# **1 Introduction**

## **1.1 About GAAC-2025**

Geometric Abstract Arts competition (GAAC-2025) is the very first competition of that nature conducted in Sri Lanka (to the best of our knowledge) and it was organized by the Brainstormers Foundation (a non-profit organization promoting mathematics education in Sri Lanka) in parallel to the celebration of International day of Mathematics 2025. Ministry of Education, Sri Lanka approved the competition and facilitated the foundation to reach the schools islandwide.

Objectives of this competition were the following:

- Integrating Mathematics, Art & Technology in to the education system
- Enhancing the awareness of students about Geometric Abstract Art
- Familiarizing the students and teachers about digital tools required in submission

## **1.2 Design of the competition**

Almost all government and private schools in Sri Lanka were informed about the competition more than a month before the deadline in one or more of the following manners and were asked to electronically submit digital images of their drawings.

- Through formal communication framework of the ministry
- By publishing in the foundation website
- Via telephone / email / WhatsApp

By the deadline we received around 1100 drawings of which 100 were selected for the second round based on their digital images. In the second round, 28 drawings with Excellent level and another 50 drawings with Merit level were selected by observation of physical drawings. From the 28 excellent drawings 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> were selected with due consideration to the availability of exact geometric shapes

## **1.3 Objectives of the analysis**

The primary objectives of this analysis are to:

- Evaluate Participation Trends
- Analyze Performance Metrics
- Assess Regional Representation
- Identify Influencing Factors
- Inform Future Competitions

By achieving these objectives, the analysis aims to provide a comprehensive understanding of the GAAC-2025 competition, celebrate the achievements of participants, and offer valuable insights for organizing successful future competitions.

## 2 Analysis

### 2.1 General

In this report, we have basically analyzed the composition of all sets of students; total participants, Selection for 2<sup>nd</sup> round and Excellent winners) based on Grade, Gender, School, the area and category of the school. Further we have compared those figures with each other (e.g. No of excellent winners / No of total participants) and also with the total student count of each category. Analysis on each dimension are in the subsequent sections.

### 2.2 Gender & Grade

Gender composition in each of the three subsets are shown in Table 1

Table 1-Gender composition of the competition

	Participants	2nd Round	Excellent
Female	63.7%	65.0%	71.4%
Male	36.3%	35.0%	28.6%

According to the Table 1. female domination is very clear in participation and it is further increased among excellent winners. Moreover, the first three places are also won by female students. Higher participation of female students can be understood as a higher tendency of females in taking part in aesthetic activities with compared to male. However, we also analyzed the gender composition grade wise and observed a higher participation of male students in grade 5 & 6 only.

It was observed that students from all grades (1-13) have participated in the competition but a significant number is from Grade 6-11. The composition is given in Table 2 in numbers and the highest in each subset are highlighted.

Table 2-Participation and achievements from each Grade

Grade	Participants(P)	Second Round(S)	Excellent (E)	S/P	E/P
1	15	1	0	7%	0%
2	42	4	0	10%	0%
3	58	5	1	9%	2%
4	51	7	2	14%	4%
5	28	1	0	4%	0%
6	124	7	1	6%	1%
7	123	10	4	8%	3%
8	128	6	1	5%	1%
9	136	11	4	8%	3%
10	117	11	4	9%	3%

11	131	21	6	16%	5%
12	48	6	3	13%	6%
13	32	10	2	31%	6%

Contribution from each grade is visually represented in Figure 1

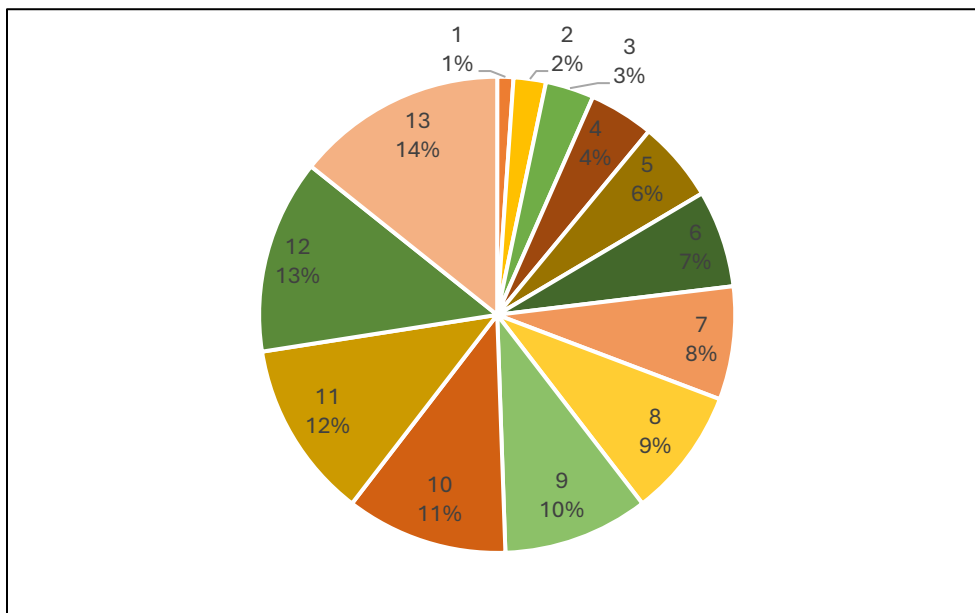


Figure 1- Contribution from different grades for the competition

Less participation from lower grades can be understood as lack of competency while that from higher grades (12/13) may be due to less involvement of extra work due to Advanced level examination. Since the competition was open (not age wise) obviously the students from higher grades have secured higher percentage among winners, however it is amazed to see a few from lower grades being selected to second round and even to Excellent category.

## 2.3 School categories

Mainly there are two types of government schools; National (managed by Central government) and Provincial (managed by provincial council). Categorization of private owned schools is quite complex so we considered those who are registered with the Ministry of Education as 'Semi government' and put all the others under 'Private/International' category. Government registered religious schools (Piriven) and special schools (e.g. for the deaf) were put in 'Other' category. The general composition among those categories is given in Table 3 and the composition of participants is visually represented in Figure 2.

Table 3- Percentage contribution from different school categories

School category	Participants	2nd Round	Excellent
Provincial	62.1%	52.0%	60.7%

National	19.1%	26.0%	14.3%
Semi government	12.0%	15.0%	17.9%
Private / International	6.1%	6.0%	7.1%
Other	0.8%	1.0%	0.0%

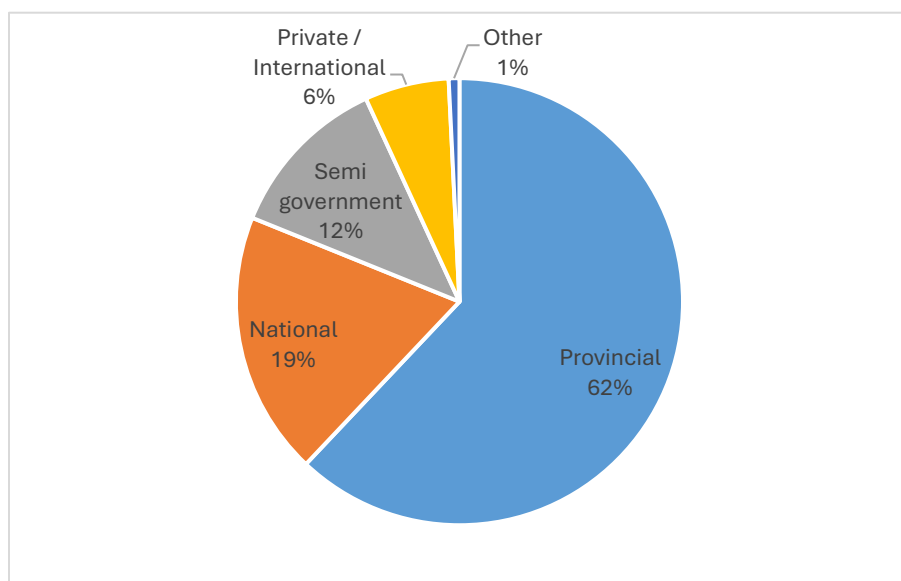


Figure 2-Participation from different school categories

Provincial schools top in all 3 categories, but it is obvious since they have the highest share (75%) in the total student population in the country. Therefore, we used a different parameter to indicate the true representation as shown in the last column of the Table 4

Table 4-Participation with respect to student population of each category

School category	Total student count	Participants	Participants per 100,000 students
Provincial	3,052,667	641	21.00
National	830,021	197	23.73
Semi government	137,869	124	89.94
Private/International	50,000?	63	126.00?
Other	71,346	8	11.21

As per the new indicator, non-government schools take the lead, however the count of Private/International schools was just an estimate as the government have no records on that figure. Predicted reasons for lower participation from government schools are as follows.

- Possibility of information not being passed via zonal/divisional offices
- Poor access to internet / email (in remote areas)
- Less awareness of parents/teachers on ICT (scanning/uploading/filling forms etc.)

## 2.4 Administrative divisions

The administrative divisions to which the school belongs were considered in this section. There are four levels of administrative divisions with regard to education (Province, District, Zone & Division) and only the first three were taken into consideration. Provincial analysis is shown in Table 5 and Figure 3

Table 5- Participation from each province for the competition

Province	Participants	2nd Round	Excellent	Participants per 100,000 students
Western	45.3%	50.0%	46.4%	48.22
Eastern	15.0%	1.0%	0.0%	41.86
Central	11.4%	13.0%	7.1%	21.75
Southern	11.0%	21.0%	25.0%	21.95
North western	10.0%	6.0%	14.3%	47.27
Sabaragamuwa	3.2%	5.0%	3.6%	8.58
Uva	1.8%	2.0%	0.0%	6.53
Northern	1.2%	1.0%	0.0%	2.43
North central	1.1%	1.0%	3.6%	3.65

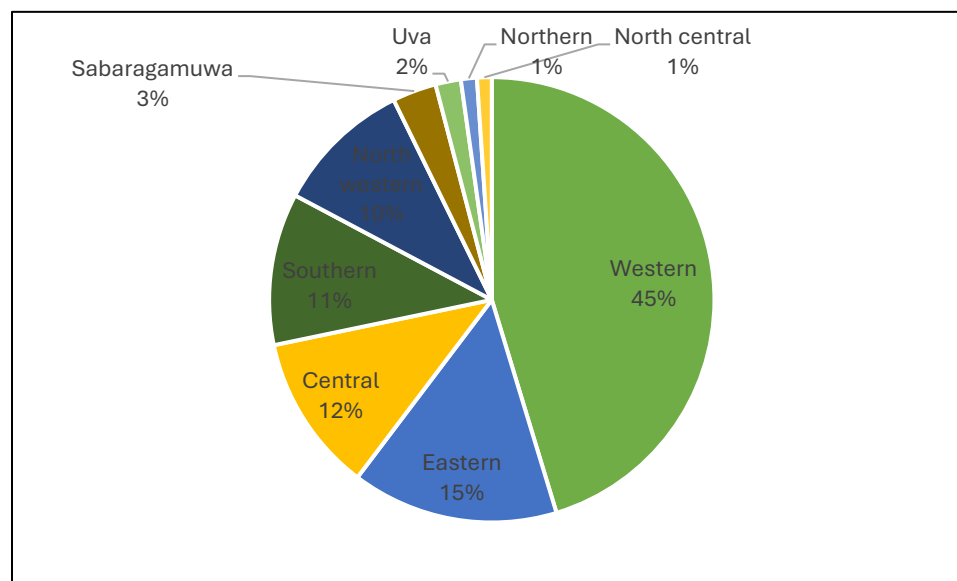


Figure 3- Provincial analysis of Participants

Western Province which includes the commercial and administrative capitals of the country leads among participants as well as winners marking 45-50% contribution to the total. Assuming it was due to the high student population, we checked the relative participation (Participants per 100,000 students) and still Western province remains highest as highlighted. However the winning percentage of certain other provinces was same (marked in yellow) or above (marked in orange) that of Western province as shown in Table 6



Table 6- Winning percentage of each province

Province	Participants (P)	Second Round (S)	Excellent(E)	S/P	E/P
Western	468	50	13	11%	3%
Eastern	155	1	0	1%	0%
Central	118	13	2	11%	2%
Southern	114	21	7	18%	6%
North western	103	6	4	6%	4%
Sabaragamuwa	33	5	1	15%	3%
Uva	19	2	0	11%	0%
Northern	12	1	0	8%	0%
North central	11	1	1	9%	9%

One possible reason for the highest participation of Western Colombo is the fact that most of the semi-government and private / international schools (which showed significant contribution as mentioned in previous section) are located in Western province. Another reason is that even the government schools in this province have more resources and the awareness & access to internet are also significantly higher with compared to other provinces.

Moving on to District wise analysis, Gampaha which is one of the districts in Western province (leading) is leading but the participation relative to the student population is higher in Ampara district which is less privileged with compared to many other districts and also not having many private schools as well. Percentage of participants / winners from each district and the number of participants per 10000 students are given in Table 7.

Table 7- District wise participation

District	Participants	2nd Round	Excellent	Participants per 10K
Gampaha	23.2%	25.0%	28.6%	66.94
Colombo	19.5%	21.0%	17.9%	52.00
Ampara	13.6%	1.0%	0.0%	89.04
Kandy	9.2%	10.0%	7.1%	33.42
Kurunegala	7.3%	5.0%	10.7%	22.31
Matara	6.9%	14.0%	17.9%	42.34
Galle	2.9%	6.0%	3.6%	14.14
Puttalam	2.7%	1.0%	3.6%	17.52
Kalutara	2.6%	4.0%	0.0%	11.97
Ratnapura	2.3%	3.0%	3.6%	10.72
Matale	1.8%	3.0%	0.0%	18.10

Badulla	1.6%	2.0%	0.0%	9.58
Hambantota	1.3%	1.0%	3.6%	9.32
Batticaloa	1.1%	0.0%	0.0%	9.35
Anuradhapura	0.9%	1.0%	3.6%	4.30
Kegalle	0.9%	2.0%	0.0%	5.59
Jaffna	0.8%	1.0%	0.0%	7.80
Kilinochchi	0.4%	0.0%	0.0%	14.47
Nuwara Eliya	0.4%	0.0%	0.0%	2.61
Trincomalee	0.4%	0.0%	0.0%	4.24
Monaragala	0.2%	0.0%	0.0%	1.76
Polonnaruwa	0.1%	0.0%	0.0%	1.08

Out of the 100 Educational zones (as per the records of Ministry) only 54 zones have participated in the competition and further there are only 22 zones from which more than 10 students have participated. Only those 34 zones are displayed in below table to make the picture simple In Table 8

Table 8- Educational zones with more than 10 participants

<b>Zone</b>	<b>Participants</b>	<b>Second Round</b>	<b>Excellent</b>	<b>Participants per 10K</b>
Dehiattakandiya	138	1	0	995.89
Colombo	116	12	4	30.01
Negombo	112	8	3	161.93
Kandy	65	9	2	22.87
Kelaniya	52	6	2	62.48
Gampaha	49	3	0	13.67
Homagama	36	4	1	58.21
Nikaweratiya	29	0	0	69.30
Minuwangoda	27	8	3	39.02
Akuressa	26	4	2	91.10
Kurunegala	26	4	2	7.73
Galle	26	6	1	12.26
Sri Jayawardanapura	25	3	0	31.77
Matara	24	6	1	14.31
Piliyandala	24	2	0	45.28
Puttalam	23	1	1	14.39

Ratnapura	21	3	1	9.38
Deniyaya	20	4	2	63.50
Katugastota	20	0	0	48.15
Matale	13	2	0	12.38
Bandarawela	13	1	0	30.46
Kalutara	13	1	0	5.76

Zonal level the picture is little bit different from that in province and district level. Dehiattakandiya in Ampara district being one of the most remote area of the country has topped exceeding all zones in Gampaha , Colombo and other districts. With compared to the student population in the area, the number of participants is exceptionally high as shown in the above table. However, the Colombo being second in participation has topped in the number of students selected to top 100 and Excellent categories. It is obvious because most of the top national schools are located in that zone and many talented students from different parts of the country also join those schools.

## 2.5 School

Most complex part of this analysis is the school level analysis. Identification of unique school names and hence the analysis quite difficult since the students of same school has filled the school name in various different formats including/excluding prefixes and city names. However, after a careful study 314 unique schools were identified as participated for the competition. It should be noted that private schools (branches) of the same network were treated as different schools and primary sections of any school which is located in the same city as the main school was not considered as a separate school. Moreover, we didn't calculate the 'Participants per 10K (or thousand)' at school level since student population of individual schools were not available.

Due to the difficulty of displaying all 314 schools in one table and injustice occurred by shortlisting base on one criteria, a couple of tables are presented below shortlisting the number of schools into 20-30 based on different criteria. The Table 9 shows the list of 17 schools from which we have received more than 10 drawings

Table 9- Schools with participation above 10 students

School	Participants	2nd Round	Excellent
Sooriyapokuna Maha Vidyalaya, Dehiattakandiya	138	1	0
St. Annes College, Daluwakotuwa	42	1	1
Holy Family Convent, Colombo 04	28	4	2
Musaeus College, Colombo 07	22	3	1
Dehiwala Tamil Maha Vidyalayam	17	1	0
Oki International School, Wattala	16	0	0
Thimbriyawa Junior College, Thimbriyawa	13	0	0

Villana Nandana Maha Vidyalaya, Alawathugoda	13	0	0
Akurugoda Kanishta Vidyalaya, Sulthanagoda	12	1	0
Bope Rajasinghe Primary School	12	0	0
Nagamaduwa Maha Vidyalaya, Wanathawilluwa	12	0	0
Thillanduwa Junior School, Negombo	12	0	0
Bengamuwa Secondary School	11	2	1
Dharmashoka Maha Vidyalaya, Kalagedihena	11	0	0
Mirihampitiya Muslim Maha Vidyalaya	11	0	0
Visakha Vidyalaya Colombo 05	11	0	0
Girls' High School, Kandy	10	2	1

Accordingly, Suriyapokuna Maha Vidyalaya has topped with 138 participants being the only school showing a 3-digit figure in the number of participants. Not a school, even any educational zone (and many of the districts even) has been unable to match that figure marked by Suriyapokuna Maha Vidyalaya as a single school. Moreover, Dehiattakandiya had topped among all other education zones (as we noted in Table 8) exclusively due to the contribution of this school since no other schools have participated from that zone.

However, only 1 out of 138 have been selected for the second round from Suriyapokuna Maha Vidyalaya but none for the excellent category. Considering that fact (top participants not being top winners) we have listed the schools from which highest number of students selected to second round and Excellent level Table 10. Here we have considered schools from which at least one student have been selected for the second round.

Table 10- Schools with at least 2 selected to second round

School	Participants	2nd Round	Excellent
Holy Family Convent, Colombo 04	28	4	2
Kanannke Siri Parakumba Central College	8	3	2
Loluwagoda Junior College, Mirigama	5	3	2
Musaeus College, Colombo 07	22	3	1
Maris Stella College, Negombo	6	3	1
Bandaranaike Maha Vidyalaya, Mirigama	3	3	0
Bengamuwa Secondary School	11	2	1
Girls' High School, Kandy	10	2	1
Mowbray College, Kandy	9	2	1
Sri Rahula College, Enderamulla	4	2	1
Henegama Central College	5	2	0

Thalala North Dharma Vijaya Maha Vidyalaya, Kekunadura	4	2	0
Royal College, Colombo 07	3	2	0
Wethara Maha Vidyalaya, Polgasowita	3	2	0

It shows that Holy Family convent, Bambablapitiya has topped among selections to second round and also topped (along with two other schools) in Excellent winners and has also achieved the third place among all participants.

While the participation is appreciated, the winning percentage should also be highlighted. As per the analysis, there are 23 schools such that their only applicant (no others participated) has been selected for the second round. Five out of them have managed to secure excellent position for their only applicant. One, Bandaranayake Maha Vidyalaya got selected their all 3 participants to the second round being the only school achieved such. All those schools achieved 100% winning percentage are listed in Table 11.

Table 11- Schools with 100% winning percentage

School	Participants	2nd Round	Excellent
Bandaranayake Maha Vidyalaya, Mirigama	3	3	0
Dharmaloka Maha Vidyalaya, Pelmadulla	1	1	1
Lyceum International School, Wattala	1	1	1
Meepawala Amarasooriya National School	1	1	1
Palatuwa Gunarathana Central College	1	1	1
Pallegama Secondary School	1	1	1
Sir Olkat Maha Vidyalaya Delwala	1	1	1
Sri Nisshanka Maha Vidyalaya, Kurunegala	1	1	1
St. Joseph's College, Anuradhapura	1	1	1
Deniyaya St Matthew Bilingual High School	1	1	0
Ds Senanayake National School, Uhumeeya	1	1	0
Dudley Senanayaka Central College, Tholangamuwa	1	1	0
Hartley College, Point Pedro	1	1	0
Jennath International School, Weligama	1	1	0
Jinaraja Model Primary School, Gampola	1	1	0
Kengala Primary School	1	1	0
Kirindiwela Central Collage	1	1	0
Kurunegala President Girls College	1	1	0
Mahinda Rajapaksha College, Matara	1	1	0

Malharus Sulhiya National College, Galle	1	1	0
No 01 Junior College, Piliyandala	1	1	0
Pathakada Buddhist Maha Vidyalaya, Pelmadulla	1	1	0
Pushpadana Girls' High School, Kandy	1	1	0
Sri Chandananda Buddhist Girls College, Katugasthota	1	1	0
Sri Chandrajothi Maha Vidyalaya, Yakkala	1	1	0
Sussex College, Malabe	1	1	0
Taxila Central College, Horana	1	1	0

### 3 Conclusion

The analysis of the Geometric Abstract Arts Competition (GAAC-2025) reveals several key insights:

- Female students dominated the competition, with a higher participation rate and success rate compared to male students. This trend was consistent across all stages of the competition.
- Participation was highest among students in grades 6-11, indicating a strong interest and competency in geometric abstract art within this age group.
- Provincial schools had the highest participation rate, which is expected given their larger student population. However, when adjusted for student population, semi-government and private/international schools showed higher participation rates, highlighting their significant contribution to the competition.
- The Western Province (District-wise, Gampaha and Colombo districts) led in both participation and success rates, likely due to large number of schools with higher student population. However, other provinces like Southern and North Western also showed strong performance in terms of winning percentages.
- Suriyapokuna Maha Vidyalaya stood out with the highest number of participants as a single school, exclusively contributing to the overall participation from the Dehiattakandiya zone as well as the Ampara district. **It emphasizes that the lack of physical resources is not a hindrance to participate in this kind of a competition as long as you have the determination and dedication.**

These findings underscore the importance of targeted initiatives to promote geometric abstract art across different demographics and regions. Encouraging participation from underrepresented groups can further enhance the reach and impact of future competitions.

## References

1. Ministry of Education, Sri Lanka. “Annual School Census of Sri Lanka – Summary report 2023 (2024)”