

*South Africa International Mathematics
Competition 2019*

(SAIMC 2019)

1st to 6th August 2019

Durban, South Africa



**“International young, critical and analytical thinkers compete in
friendly rivalry to solve Mathematical Challenges.”**

Information

1 Rationale

It has been generally acknowledged that Mathematics is a vital subject which enables the student to access every other aspect of the curriculum. Along with reading and writing, it develops the individual, allowing them to participate fully in life, stimulating creativity as well as critical and analytical thinking. Providing children with these higher order thinking skills at the primary level, the “Golden Period of learning”, contributes significantly to their learning development in the secondary level and allows students to pursue a range of careers and interests.

2 SAIMC 2019 Objectives

- a) To organize an international mathematics competition for key stage II (Upper Primary Level) and key stage III (Lower Secondary Level) students;
- b) To create an academic atmosphere to motivate teachers and students to improve the teaching and learning of mathematics with emphasis on developing higher order thinking skills;
- c) To establish networks with international educational organizations for the development of teaching and learning of mathematics;
- d) To provide young mathematicians from participating countries with opportunities to interact with each other in a friendly environment while sharing both mathematics knowledge and cultural experiences;
- e) To provide ideas on how to upgrade the school mathematics curriculum to be on par with international standards;
- f) To provide mathematics teachers and parents of gifted students an international forum to exchange best practice ideas for the improvement of the teaching of mathematics.
- g) To develop teachers and empower them with the confidence and skills needed to teach problem solving in their daily mathematics lessons.

3 Activities

- a) International Mathematics Competition.
 - Keystage II - Elementary Mathematics International Competition 2019 (IMC : EMIC 2019)
 - Keystage III - Invitational World Youth Mathematics Intercity Competition 2019 (IMC : IWYMIC 2019)
- b) International Mathematics Educators Conference.
- c) Local Mathematics Educators Problem Solving Workshop.
- d) International Cultural Exchange Programme.

4 Proposed Itinerary

South African International Mathematics Competition 2019 (SAIMC 2019) will be held from 1st to 6th August 2019 in Durban, South Africa. The official period of the Competition is from lunchtime on 1st August until after lunch on 6th August.

| Date | Student, Deputy Leader, Accompanying person | Leader |
|-----------------|---|---|
| 1st August 2019 | Arrival of participants and registration | Arrival of participants and registration |
| | | Team Leaders and Deputy Leaders Orientation Meeting of Team Leaders |
| 2nd August 2019 | Puzzle Challenge/sightseeing | Translation of Contest Papers |
| | Opening Ceremony | |
| 3rd August 2019 | Individual Contest | Teacher development workshop |
| | Team Contest | |
| 4th August 2019 | Beach activities/sightseeing | Moderate Contest Paper |
| | Cultural Night | |
| 5th August 2019 | Sightseeing Tours | |
| | Awards and Closing Ceremony | |
| 6th August 2019 | Departure for Homeland/ tour | |

5 SAIMC 2019 Information

5.1 Participation and Application

Participation in the competition is by invitation. The organizer will be responsible for all official expenses of only 2 teams per country ** in each division including accommodation, meals, and sightseeing during the official period (from 12:00 1st to 12:00 6th August) of the competition in Durban, South Africa. Each team must comprise a maximum of 6 members: a team leader, a deputy leader and 4 students.

(Any team with 3 students only, may only have a team leader free of charge. Any team with only 1 or 2 student(s) will need to pay US\$650 for an accompanying team leader or deputy leader.)

**The following countries may apply to send up to four teams to participate in each division of the IMC Executive Board organized math contests due to their status as former hosts of IMC activities: Bulgaria, China, Hong Kong, India, Indonesia, Macau, Philippines, South Africa, South Korea, Taiwan and Thailand. If there is application from more than 150 teams the IMC Executive Board reserves the right to invite fewer teams from some countries in order to manage the total number of teams in the competition.

5.2 Divisions of Competition

IMC is composed of 2 divisions:

- a) Key Stage II Division (Upper Primary Level) (EMIC)
- b) Key Stage III Division (Lower Secondary Level) (IWYMIC)

5.3 Participant conditions

a) Key Stage II:

- Students must not be enrolled in a secondary level or in any equivalent institutions;
- Students must have been born on or after **1 August 2005**.
- Students who were born between **2 August 2005** to **1 August 2006** must submit a school certificate as proof that they are students of a primary school.

Each contestant must fit both conditions or his/her results will not be given recognition.

b) Key Stage III:

- Students must not have been enrolled in upper secondary level or in any equivalent institutions; and
- Students must have been born on or after **1 August 2002**.
- Students who were born between **2 August 2002** to **1 August 2003** must submit a school certificate as proof that they are students of a lower secondary school.

Each contestant must fit both conditions or his/her results will not be given recognition.

5.4 SAIMC 2019 Contest Paper Official Languages

English and Chinese will be the official languages of SAIMC 2019 contest papers and the countries not adopting English will translate the contest papers into their own language.

5.5 Competition papers

Each participating country must send ten proposed problems, using Word files written in English, for the Key Stage II contest and the Key Stage III contest; that is, five for the individual contest and another five for the team contest on or before 20 April 2019 to allow time for the IMC Academic Committee to select questions and prepare the competition papers. The team leaders must avoid using the proposed problems they submit to the organizers when training their contestants.

5.6 SAIMC 2019 Technical Committee

- Mathematics experts from South Africa.
- Members of IMC Executive Board and Academic committee.

5.7 Structure of the Contest Papers

● Individual Contest

a) KEYSTAGE II (EMIC):

The Individual Contest consisting of 15 questions requires only ARABIC NUMERICAL answers to be filled in the blank of the answer sheet. Each problem is worth 10 points with a maximum total of 150 points.

b) KEYSTAGE III (IWYMIC)

The Individual Contest consisting of 12 questions requires only the answers to be written in the blanks, and 3 of the questions require full solutions. The former is worth 5 points each while the latter is 20 points each, with a maximum total of 120 points.

● Team Contest

There are 10 problems in the Team Contest, arranged in increasing order of difficulty. Each question is printed on a separate sheet of paper. The four team members are allowed 10 minutes to discuss and distribute the first 8 problems among themselves; each student solves at least one problem. *Team members are not allowed to use pencil or pen during the ten minutes discussion period.* Each will then have 35 minutes to write the solutions of the allotted problem independently, with no further discussion or exchange of problems. The four team members are allowed 25 minutes to solve the last 2 problems together. Each problem is worth 40 points and problem 2, 4, 6, 8 and 10 require complete solutions for full credits. Partial credits may be awarded.

5.8 Awards and Prizes

(1) Individual Prizes:

Approximately two-thirds of the contestants will receive Individual Awards, in the form of Gold, Silver and Bronze Medals as well as Merit, in the approximate ratio of 1:2:3:4.

(2) Team Prizes:

There are two Team Prizes, one based on the Individual Contest and another on the Team Contest. Teams are divided into six groups of approximately equal sizes.

(3) Team Prizes based on the Individual Contest:

The sum of the highest three scores among the four members of each team for the Individual Contest will be computed. In each group, prizes will be given to the three teams achieving the highest three sums. In case of ties, precedence is given to the team with the highest score of the fourth team member. If teams still remain in a tie, the SAIMC 2019 Adjudicating Committee will make a ruling.

(4) Team Prizes based on the Team Contest:

The total score of all ten problems is considered the team score. In each group, prizes will be given to one Champion, two First runners-up and three Second runners-up. The teams are first ranked by their total scores. Ties are broken according to the scores of individual problems, starting with the most difficult one. Further ties will be ruled on by the SAIMC 2019 Adjudicating Committee.

(5) Grand Prize:

The Grand Prize is awarded according to the sum of the four team members' score in the Individual Contest and of the team's score in the Team Contest. The maximum score is $4 \times 150 + 400 = 1000$ (for EMIC) and $4 \times 120 + 400 = 880$ (for IWYMIC). Second and Third Prizes are also awarded. Ties are broken according to the scores of the Team Contest. If teams still remain in a tie, it will be broken according to the scores of individual problems, starting with the most difficult one. Further ties will be ruled on by the SAIMC 2019 Adjudicating Committee.

(6) Special Prizes:

In addition, two other types of Awards will also be presented at the Closing Ceremony:

- a) The three teams that present the best performances, in terms of coordination, creativity and overall impression, in the Cultural Night will receive awards as determined by the SAIMC 2019 Organizing Committee.
- b) The three teams whose members best exhibit, the spirit of friendship and cooperation will receive awards based on voting by the guides of all the teams and members of the SAIMC 2019 Organizing Committee.

6 Medical Care for Participants

The organizer will provide accident insurance for all participants during the official period of the competition. The insurance will cover accidents leading to death or permanent disability of the body; therefore, all participants are advised to arrange their own medical insurance.

7 Period of Application and Procedure

Each city or country wishing to apply participation in SAIMC 2019 should

- submit their application form by e-mail on or before (1 March 2019)
- submit a filled-up application by (1 May 2019)
- submit proposed problems by (19 April 2019)
- complete the arrival and departure schedule form by (1 June 2019)
- confirm their itinerary by (15 June 2019)

Each participating city or country has to send confirmation of its participation through these e-mails: ccmp@seed.net.tw and SAIMC2019@gmail.com

8 Expenses (Official period 12:00 on 1st to 12:00 on 6th August 2019)

- a) The organizer will be responsible for all official expenses of only 2 teams in each division including accommodations, meals, and sightseeing during the official period of the competition in Durban, South Africa.
- b) For former host countries listed in 5.1 the organizer will be responsible for 4 teams in each Keystage.
- c) Additional observers, parents and other accompanying persons will need to pay US\$750 per person for their accommodation, meals, transportation, and sightseeing during the official period of the competition. Additional team members will each pay US\$650 per person. Participants may have to share rooms with their own team members or with members of the other teams. Those participants who want to use a single room, will be charged an additional US\$50 per person per night.
- d) Each participating team is responsible for the travelling expenses from their homeland to Durban, including payment of visa fees and other expenses for their entry to South Africa.
- e) Any teams arriving in Durban from any other place in South Africa will be responsible for their own transportation expenses from that city to Durban.
- f) We encourage all the parents and other accompanying persons to register as Official Delegates of SAIMC 2019. The organizer reserves the right to refuse admission to, or to collect an entrance fee from, anyone who is not registered as an official delegate and is interested in participating in any of the SAIMC 2019 activities.

9 Additional Information

Each participating country should do the following:

- Inform the organizer in advance of any specified dietary requirements or restrictions;
- Prepare a cultural performance of at most 3 minutes for the cultural night;
- Complete visa procedures before arriving in South Africa.
- Check visa requirements at the website of the Department of Home Affairs : www.dha.gov.za to prevent possible problems.
- Delegates arriving in Durban before 1st August 2019, or leaving after 6th August 2019, will need to pay an additional amount of US\$ 50.00 per night per person sharing a room, (no meals included).
- Delegates who want to use a single room with no companion, will need to pay US\$ 50 per person per night.
- Bring their national flag with them for the opening Ceremony and parade. Dimension must be 1m by 1.5m

10 Responsible Office

EThekweni Municipality, Durban, South Africa

E-mail : SAIMC2019@gmail.com