

3. Mathematics Education

Mrs. P.S. Tong

The Mathematics Department aims to develop in students the ability to conceptualize, inquire and reason mathematically, and to use mathematics to formulate and solve problems in mathematical contexts and other disciplines. Last year has been a busy year within the Department, and we have all been working incredibly hard to give students the best opportunities to succeed

Our teachers dedicated time and effort in providing quality education for our students. They are attentive to students' needs and supportive of their learning. Several mock sessions were held to prepare S.6 students for the public examinations. Tutorials were held frequently to provide students with assistance in mastering the subject. A bridging course for new S.1 and pre-exam tutorials for junior secondary students were conducted. All these arrangements equipped students with the subject knowledge deemed necessary to undertake further studies successfully.

It is gratifying to see that our students continue to perform excellently in the HKDSE examination this year. In the compulsory part, 17.0% of students achieved 5** and 67.3% attained Level 5 or above. In the Calculus and Statistics Module, 23.1% of students scored 5** and 76.9% scored Level 5 or higher; and in the Algebra and Calculus Module, 15.6% of students scored 5** and 84.4% scored Level 5 or higher. The A level girls also performed impressively in the International Advanced Level (IAL) examination. 50% of them scored A* and 100% attained B or above. This level of success can be credited to the hard work of the teachers and students.

We offered different enrichment activities for our junior secondary students. Examples of activities include the 'Mathematics trail', "Tessellation and Symmetry" and "STEAM Workshop on Making Paper Dodecahedron". These activities, with appropriate use of technology, were designed to provide students with interactive learning experiences, and the lively classroom atmosphere generated helped them to become actively engaged in the learning process.

The reading scheme was conducted in most S.2 and 3 classes with the aim to enable students to value mathematics and to apply concepts learnt to different situations. The topics discussed this year were 'Caesar Cipher', 'Geometrical representation of identities', 'Pythagorean triples', 'A few words about proofs', 'Cryptography' and 'The Golden Ratio and The Great Pyramid of Giza'.

The Mathematics Team Student Committee worked enthusiastically to enhance the team spirit and promote the beauty of mathematics. In March, they organised a Mathematics Theme Week which included a series of activities such as a Mathematics Talk on Cryptography, interclass competition, whole-school challenge, game booths and board display. All these activities were held successfully and brought fun to everyone who attended. In June, the student committee participated in the "STEM Activities for DGJS Primary 4 Students" by setting up a booth on Cryptography. The students were delighted to share their knowledge on Caesar Cipher and Enigma codes to the younger students.

To nurture our mathematicians, we have training classes conducted by our teachers and elite classes conducted by experienced trainers. This year, we are grateful to have Mr. Jeffrey Hui and Miss Mandy Kwok, both former members of the International Mathematical Olympiad Hong Kong (IMO HK) Team, and Dr. TW Leung, a trainer of the IMO HK team to train our elite students. Around 100 girls attended these regular trainings. These mathematicians participated actively in various competitions and challenges to enrich their exposure to Mathematics and exhibit their talents. The commitment of the mathematicians and teachers were rewarded with success and recognition.

The major achievements of the girls in various competitions are listed below:

1. China Girls' Mathematical Olympiad (CGMO) 2017
Silver Medal: Poon Ho Kiu Allie
Bronze Medal: Leung Ka Ching, Ng Sze Mai
2. International Mathematical Olympiad Preliminary Selection Contest
Silver Award: Ng Sze Mai
Bronze Award: Leung Ka Yan Miko, Tam Hoi Yan, Leung Ka Ching, Wong Chi Ka
3. The 4th International Mathematical Modeling Challenge
Finalist:
team comprising Hui Yuk Ting Victoria and Ng Hannah
Meritorious:
team comprising Ng Sze Mai, Chin Hei Yin Ramona, Lau Tsz Ching Rachel and Wong Chi Ka
team comprising Chu Tsz Wai Athena, Zhu Kezhen and Chen Ling Yi
4. The 4th International Mathematical Modeling Challenge for the Region of Mainland, Taiwan, Hong Kong and Macau
Outstanding Award:
team comprising Ng Sze Mai, Chin Hei Yin Ramona, Lau Tsz Ching Rachel and Wong Chi Ka
Meritorious:
team comprising Chu Tsz Wai Athena, Zhu Kezhen, Chen Ling Yi and Wong Chi Ka
team comprising Chin Hei Yin Ramona, Lau Tsz Ching Rachel, Hui Yuk Ting Victoria and Ng Hannah
5. Hong Kong Junior Mathematics Olympiad – National Mathematical Forum for Youths
Mathematical Modelling Section
2nd Runner up: team comprising So Wing Tung Abby, Wong Ka Yu (1U) and Lam Wai Sum
Problem Solving Section
1st Runner-up: So Wing Tung Abby
2nd Runner-up: Ng Hei Man Jolie
6. Hong Kong Mathematical High Achievers Selection Contest
Team: Merit Prize
1st Class Award: Leung Ka Yan Miko, Tam Hoi Yan, Tse Wing Yan
2nd Class Award: Chu Tsz Wai Athena, Ip Tsz Oi
7. True Light Girls' Invitational Mathematics Contest 2017
Team: Champion
Individual:
Champion : Leung Ka Yan Miko
1st Runner-up : Ng Sze Mai
2nd Runner-up : Kwan Valerie
8. National Hua Luo Geng Cup Mathematics Competition 2018 (Hong Kong region)
3rd Class Award: Wong Ka Yu, Ip Tsz Oi

9. Canadian Mathematics Contests
 - Hong Kong champion for Euclid, Hypatia and Fryer Contests.
 - Hypatia Contest: 6 students received distinction certificates
 - 2nd place in Hong Kong: Chin Hei Yin Ramona, Leung Ka Ching
 - Fryer Contest: 7 students received distinction certificates
 - 1st place in Hong Kong: Tam Hoi Yan
 - 2nd place in Hong Kong: Chu Tsz Wai Athena, Leung Ka Yan Miko
 - Euclid Contest: 2 students received distinction certificates
 - Medalist: Wong Chi Ka
 - Cayley Contest: 76 students received distinction certificates
 - Medalist: Fan Sum Yin
 - Pascal Contest: 54 students received distinction certificates
 - Medalist: Leung Ka Yan Miko, Hui Wing Kiu, Ho Ching Hei
 - Gauss Contest: 49 students received distinction certificates
 - Top Scorers: Tan Yu Yng Lorraine, Tsui Vivienne

10. Pui Ching Invitational Mathematics Competition 2018
 - Team : Merit
 - Individual :
 - Gold Award : Ng Sze Mai
 - Bronze Award : Ip Tsz Oi, Leung Ka Yan Miko

11. Mathematics Book Report Competition for Secondary Schools 2017 – 2018
 - First Class Prize: Ip Tsz Sum
 - Second Class Prize: Cheung Chun Yan Alicia, Cheung Hoi Yung, Hon Kai Yu, Sheung Yui Yuen, Ng Sze Mai

12. Mathematics Project Competition for Secondary Schools 2017 – 2018
 - Good Performance : team comprising Chu Tsz Wai Athena, Leung Ka Yan Miko, Hui Yuk Ting Victoria, Tam Hoi Yan, Zhu Kezhen, Ng Tsz Ching Alexia

13. The 9th Hong Kong Mathematics Creative Problem Solving Competition for Secondary Schools
 - Silver Award : team comprising Cheung Ka Yan, Ng Hei Man Jolie, Chan Tsz Ching, Lai Sum Yee

14. American Mathematics Olympiad (AMO 2017)
 - Gold Award : Ip Tsz Oi
 - Silver Award : Cheung Chun Yan Alicia, Tsui Vivienne
 - Bronze Award : Chan Tsz Ching, Chan Hayley, Wan Kiu Isabella, Sheung Yui Yuen

15. Mathematics Without Borders International Tournament 2018 (Winter Round) (Hong Kong Region)
 - Secondary Two Category : Champion : Cheung Chun Yan Alicia
 - Gold Award : Cheung Chun Yan Alicia, Tsui Vivienne
 - Bronze Award : Chan Hayley

16. Australian Mathematics Competition 2017
 - Overall: 15 Distinction Awards and 21 Credits Awa

17. Hong Kong & Macau Mathematical Olympiad Open Contest cum The Asia International Mathematical Olympiad Open Contest Trial 2018
Overall: 14 Gold Awards, 11 Silver Awards and 1 Bronze Award
Gold Award: Ng Hei Man Jolie, Wong Ka Yu, Ko Hon Yiu, Cheung Chun Yan
Alicia, Ip Tsz Oi, Sheung Yui Yuen, Tsui Vivienne, Chu Tsz Wai Athena, Tam Hoi Yan, Tse Wing Yan, Choy Huen Wai Chloe, Mak Chiu Ki Astor, Moy Sze Wing Clara, Wong Chi Ka
18. 「華夏盃」全國數學奧林匹克邀請賽 2018
(全國) 總決賽
一等獎: 張雋欣, 吳芷晴
二等獎: 宋修璇
三等獎: 許凱琳
(華南賽區) 晉級賽
共奪得二個特等獎、九個一等獎、十二個二等獎和二個三等獎
特等獎: 朱芷慧, 梁嘉恩
(香港賽區) 初賽: 共奪得廿二個一等獎、十三個二等獎和六個三等獎

To conclude this report, I would like to express my heartfelt thanks to all the teachers in the Department. Without their support and contribution, such achievements could not have been possible. I also wish to express my gratitude to our Headmistress, Mrs. S. Lau, for her generous support and encouragement throughout the year.

STEAM Workshop on Making Paper Dodecahedron for S.1 – S.3 students



Mathematics Theme Week



STEM Activities for DGJS Primary 4 Students

