

### 3. Mathematics Education

Miss B. Lee

At DGS, we are committed to preparing our students for success in both university and their future careers. To achieve this, we offer a comprehensive and engaging mathematics education that promotes critical thinking, problem-solving, and mathematical proficiency across a wide range of fields.

Our mathematics curriculum covers a broad range of mathematical concepts, from basic arithmetic to advanced calculus and statistics. Our goal is not only to provide students with the knowledge and skills necessary to succeed in these areas, but also to help them understand how to apply these concepts effectively in real-world situations. This involves fostering critical thinking, logical reasoning, and effective communication skills. We also strive to inspire students to appreciate the beauty and practicality of mathematics. Our department aims to help students understand the importance and relevance of mathematics in their daily lives, fostering a lifelong passion for learning and a recognition of the ability of mathematics to provide solutions and create new opportunities.

As the pandemic comes to an end, we are thrilled to resume our regular activities with renewed energy and excitement. However, we must keep in mind the lessons we learned during the pandemic, particularly the importance of being adaptable and flexible in the face of unforeseen circumstances, as we return to our classrooms. To ensure our students have the best possible experience, we must be prepared to pivot and adjust our teaching methods as necessary to help them reach their full potential. As part of our commitment to excellence, we are now offering Further Mathematics as an elective in the International Advanced Level (IAL) curriculum this year. By providing a variety of courses and electives, we can ensure our students receive a well-rounded education that prepares them for success in the real world.

To rekindle our students' passion for mathematics, we are using a multi-faceted approach. One of our strategies is to revive our annual math theme week, which includes a range of engaging activities to make learning mathematics fun and innovative. During this week-long event, we organised an Inter-house Mathematics Competition for students from different houses to compete in various mathematical challenges. Additionally, we arranged for a special guest speaker, Professor Siu Man Keung, a renowned mathematician who has made significant contributions to the field, to give a talk to our students. We are honoured to have had him speak to our students, as he shared his insights and experiences in hopes of inspiring our students to further explore their love for mathematics. By taking these steps, we aim to create an environment where our students feel excited and motivated to learn about mathematics. We believe that by making mathematics enjoyable and engaging, we can help our students develop a love for the subject that will last a lifetime.

Our students performed exceptionally well in the HKDSE examination. In the compulsory part, 14% of them earned the highest possible score of 5\*\*, and 72% achieved a Level 5 or higher. In the Calculus and Statistics Module, 81% of students obtained a Level 5 or higher, and in the Algebra and Calculus Module, 78% achieved a Level 5 or above. Similarly, the results in the International Advanced Level (IAL) examination were impressive, with 62% achieving an A\* and 97% earning a B or higher. As we celebrate this remarkable accomplishment, it is important to recognise the exceptional difficulties our students have faced during the past year. The pandemic has disrupted everyone's lives, and our students have had to adapt quickly to new learning environments and modes of instruction. Despite these challenges, they have remained focused and committed to their studies, demonstrating a level of maturity and determination that is truly inspiring. We are incredibly proud of their resilience and perseverance, and we know they will continue to achieve great things in the future.

In recent years, our students have excelled in mathematical modelling as an enrichment activity. Moving forward, we aim to sustain this progress and build on the foundation of success we have established. This year, the results in various mathematical modelling competitions have been consistently outstanding. At the 9th International Mathematical Modeling Challenge (International Contest of Greater China), the team comprising Li Ruyi (3U 21), Xiao Jiaqi (3U 34), Liu Zuri Jade (3X 22) and

Yeung Man Yan Grace (3U 36) was awarded the Finalist Award. Another team comprising Lee Crystal (4W 22), Li Sze Wing Jennifer (4W 24), Ching Helen (3U 6) and Jiang Yolanda Pak Yin (4W 13) won the Outstanding Award and was one of the two teams representing Hong Kong in the 2023 International Mathematical Modeling Challenge. The team was one of the 55 teams from 31 countries/regions and won the Honourable Mention Award. Another international mathematical modelling contest is High School Mathematical Contest in Modeling (HiMCM 2022). The team comprising Lam Ho Ke (4W 21), Li Sze Wing Jennifer (4W 24), Ng Si Ting (4W 29) and But Wing Hei (4W 41) won the Honourable Mention award.

Other major achievements in various competitions are listed below:

1. The 9th Annual International Mathematical Modeling Challenge (IMMC): The Regional Contest of Greater China

Finalist Award:

team comprising Ching Helen, Jiang Yolanda Pak Yin, Lee Crystal,  
Li Sze Wing Jennifer

Honourable Mention:

team comprising Li Ruyi, Liu Zuri Jade, Xiao Jiaqi, Yeung Man Yan Grace

2. The 9th International Mathematical Modeling Challenge (IMMC): The International Contest of Greater China

Outstanding Award:

team comprising Ching Helen, Jiang Yolanda Pak Yin, Lee Crystal,  
Li Sze Wing Jennifer

Finalist Award:

team comprising Li Ruyi, Liu Zuri Jade, Xiao Jiaqi, Yeung Man Yan Grace

3. The 2023 International Mathematical Modeling Challenge

Honourable Mention:

team comprising Ching Helen, Jiang Yolanda Pak Yin, Lee Crystal,  
Li Sze Wing Jennifer

4. The 25<sup>th</sup> High School Mathematical Contest in Modeling (HiMCM 2022)

Honourable Mention:

team comprising But Wing Hei, Lam Ho Ke, Li Sze Wing Jennifer,  
Ng Si Ting

5. The 5th International Team and Individual Mathematics Modelling Tournament for high-school students (MMT)

Overall Champion:

team comprising Ching Helen, Li Ruyi, Xiao Jiaqi,  
Yeung Man Yan Grace

First prize in Mathematics Around Us (MAU) and the Second prize in Mathematics Applied To Sciences (MATS): Xiao Jiaqi

Third prize in Mathematics Around Us (MAU) and Mathematics Applied To Sciences (MATS): Ching Helen, Li Ruyi

6. Mathematical Modelling Competition for Secondary Students (MMCSS) 2023  
 Junior Secondary Meritorious Award:  
     team comprising      Kwan Ming Wai, Lam Isis, Luk Cheuk Yiu Sylvia  
  
 Senior Secondary Meritorious Award:  
     team comprising      Jiang Yolanda Pak Yin, Li Sze Wing Jennifer, Ng Si Ting
7. 2022 – 2023 Statistical Project Competition for Secondary School Students  
 Senior Section Third Prize:  
     team comprising      Chan Sze Wing Christine, Chim Hoi Yi Kelly,  
                                  Jiang Yolanda Pak Yin, Leung Hoi Ying Leia,  
                                  Nie Sze Nga Rachel, Wong Cheuk Kiu  
  
 Senior Section Distinguished Prize:  
     team comprising      Chow Tsz Yau, Chan Hei, Pak Hoi Man Chloe,  
                                  So Hoi Ting, Wu Bailing, Zhou Jiatong
8. Mathematics Project Competition for Secondary Schools 2022 – 2023  
 Champion and Award for Best Presentation:  
     team comprising      Ching Helen, Li Ruyi, Liu Zuri Jade, Xiao Jiaqi,  
                                  Yeung Man Yan Grace  
  
 Outstanding Performance Award and Mathematical Modelling Award:  
     team comprising      Chan Pui Kei, Ho Pui Fei, Kaylie Wong, Xu Jiayan,  
                                  Zheng Ziling Linnie
9. Mathematics Book Report Competition for Secondary Schools (2022 – 2023)  
 Second Class Prize: Wong Hoi Ching, Yiu Tung Toby
10. Hong Kong Mathematics Creative Problem Solving Competition for Secondary Schools (2022 – 2023)  
 Merit Award:  
     team comprising      Au Wing Hei Jazlyn, Chien Yanoach, Lam Juna Claire,  
                                  Zheng Ziling Linnie
11. International Mathematical Olympiad Preliminary Selection Contest – Hong Kong 2023  
 Bronze Award: Chow Tsz Yau, Leung Tiffany Sabrina  
  
 Honourable Mention: Ip Wing Chun, Jiang Yolanda Pak Yin, Li Ruyi
12. The Heats of 40<sup>th</sup> Hong Kong Mathematics Olympiad (HKMO)  
 Regional Heats in Kowloon Region 2:  
     team comprising      Chow Tsz Yau, Ip Wing Chun, Jiang Yolanda Pak Yin,  
                                  Leung Tiffany Sabrina, Li Ruyi, Wu Bailing  
  
 Second Class Honour: Chow Tsz Yau  
  
 Third Class Honour: Leung Tiffany Sabrina, Li Ruyi

13. The 25<sup>th</sup> Hong Kong Mathematical High Achievers Selection Contest  
 Top 10 award:  
     team comprising              Li Ruyi, Liu Zuri Jade, Xiao Jiaqi  
  
 First Class Award: Li Ruyi  
  
 Second Class Award: Liu Zuri Jade, Xiao Jiaqi
14. The 4<sup>th</sup> Centennial Schools Mathematics Competition  
 榮譽獎: Leung Tiffany Sabrina, Liu Zuri Jade
15. National Hua Luo Geng Cup Mathematics Competition 2022 (Hong Kong region)  
 First Class Award:        Zheng Ziling Linnie  
 Second Class Award:    Mai Polly  
 Third Class Award:      Wong Hoi Ching
16. National Hua Luo Geng Cup Mathematics Competition 2023 (Hong Kong region)  
 Silver Award:    Chien Yanoch  
 Bronze Award: Lam Juna Claire, Zhang Xinyan, Zheng Ziling Linnie
17. Canadian Mathematics Contests  
 Top Scorers:  
     Gauss Contest:        Cheung Hoi Yin Ariel, Ho Tsz Yan Antonia, Ip Hei Yiu Greta,  
                                  Kwong Hay Tung Hayden, Leung Hoi Shun Bethanie,  
                                  Zhang Xinyan  
  
     Pascal Contest:        Kee Cheuk Yin Chloe, Li Ruyi, Luk Cheuk Yiu Sylvia,  
                                  Tang Yat Sum Samantha, Yeung Man Yan Grace  
  
     Cayley Contest:        Ip Wing Chun
18. American Math Olympiad  
 Gold Award:                Chow Tsz Yau, Leung Tiffany Sabrina, Li Ruyi,  
                                  Li Sze Wing Jennifer, Liu Zuri Jade, Wong Hoi Ching  
  
 Silver Award:                Au Wing Hei Jazlyn, Lee Crystal, Lo How Ching Michelle,  
                                  Wu Bailing, Zhang Xinyan  
  
 Bronze Award:                Chan Chun Yi, Chan Pui Kei, Chien Yanoch, He Lok Yiu,  
                                  Li Michelle Takako, Xia Xinyue, Zhang Tsz Ki
19. 2023 Hong Kong Mathematics Kangaroo Contest  
 Grade 8            Third Prize:    Lau Hei Tung Hazel, Wong Hoi Ching  
 Grade 9            Second Prize:    Li Ruyi, Luk Cheuk Yiu Sylvia  
                          Third Prize:    Ching Helen, Xiao Jiaqi  
 Grade 10           Second Prize:    Lee Crystal

Grade 11      Third Prize:      Lam Ho Ke, Wong Tsz Ching Andrea  
First Prize:      Chow Tsz Yau  
Second Prize:      Wu Bailing

20. True Light Girls' Invitational Mathematics Contest 2022

Group Champion:

team comprising      Ip Wing Chun, Lam Ho Ke, Li Ruyi, Xiao Jiaqi

Individual Champion:      Ip Wing Chun

21. Asia International Mathematical Olympiad Open Contest – Semi-Finals 2023

Gold Award: Au Wing Hei Jazlyn, Li Ruyi, Wong Hoi Ching

22. 「華夏盃」全國數學奧林匹克邀請賽 2023 晉級賽

特等獎: Au Wing Hei Jazlyn, Luo Wanqing, Wong Hoi Ching

In conclusion, I would like to express my sincere appreciation and gratitude to the Headmistress for her support and all the mathematics teachers for their amazing effort and dedication. Their unwavering commitment to our students' education and personal growth has truly made a difference. Thanks to their hard work and support, our students have been able to develop new skills, expand their knowledge, and reach their full potential. The passion and enthusiasm they bring to their work is truly inspiring, and we are fortunate to have them as part of our school community.

Looking forward to the upcoming academic year, I am confident that our students will continue to excel and achieve great things with the continued guidance and mentorship of our Headmistress and teachers. Once again, thank you to the Headmistress and all the teachers for their tireless efforts and dedication to our students.