

3. Mathematics Education

Miss B. Lee

In the 2023–24 academic year, the Mathematics Department remained committed to delivering outstanding educational experiences. We continued to maintain high standards in mathematical instruction while cultivating students' passion for the subject.

Our mathematics curriculum covers a wide range of topics, from basic arithmetic to advanced calculus and statistics. We aim to provide students with the necessary skills and knowledge for mathematical proficiency, while also enhancing their ability to apply these concepts in real-world situations. Our approach focuses on developing critical thinking, logical reasoning and effective communication skills. We strive to instill an appreciation for both the theoretical and practical aspects of mathematics. By demonstrating how mathematical concepts relate to everyday life, we keep students engaged and showcase the applicability of mathematics in problem-solving and creating opportunities.

In addition to offering the DSE curriculum, the department recognises the importance of providing diverse curriculum options to address students' individual learning requirements, interests and future academic or professional aspirations. By offering a variety of curricular choices, we ensure students can engage in courses that complement their strengths and ambitions, thereby promoting a more tailored and enriching educational experience.

The International Advanced Level (IAL) mathematics curriculum was implemented in 2016. Subsequently, in 2022, we incorporated the IAL Further Mathematics curriculum as an elective option. Within the IAL mathematics curriculum, students are required to complete 6 mathematics examinations, whereas IAL Further Mathematics students must complete 12. The inaugural cohort of Further Mathematics students, currently in Secondary 6, has successfully completed 6 examinations with exceptional results. We extend our best wishes to them for their remaining 6 mathematics examinations.

Exploring beyond standard curricula enables students to pursue passions, discover new interests and gain practical skills often missing from traditional academics. This holistic approach fosters a well-rounded skill set, better preparing individuals for life's challenges and opportunities. To meet our students' needs, we have integrated enrichment activities beyond the standard curriculum for Secondary 1 to 5.

Secondary 1 – Mathematics Trail

This mathematical journey consists of a sequence of checkpoints where students discover mathematics collaboratively in teams of 3 to 4 members on the DGS campus.

Secondary 2 & 3 – Mathematics Reading Scheme

Students engage with supplementary reading materials. These articles expand on previously covered topics, reinforcing and deepening knowledge

Secondary 4 – Mathematical Modelling Course

To promote mathematical modelling, the course is introduced in the S.4 curriculum. This allows students to apply mathematics to real-world problems, developing their interest and appreciation for the subject. Students can experience the power and beauty of Mathematics, seeing it as both useful and enjoyable.

Secondary 5 – Calculus Course

Since Calculus is not part of the DSE core mathematics curriculum, it has been incorporated into the S.5 curriculum. This introduction exposes students to the fundamental concepts of differentiation and integration. Students have the chance to explore and understand the principles that underpin higher-level mathematics. This exposure not only broadens their mathematical knowledge but also prepares them for more complex mathematical challenges in their future academic pursuits.

In the 2024 HKDSE examination, our students performed exceptionally well. In the compulsory part, 19% of students earned the highest possible score of 5** and 77% achieved Level 5 or higher. In the Calculus and Statistics Module, 89% of students obtained Level 5 or higher, and in the Algebra and Calculus Module, 77% achieved Level 5 or above. Similarly, the results in the International Advanced Level (IAL) examination were impressive, with 69% of students achieving A* and 98% earning B or higher. Their outstanding academic performance reflects both their intellectual abilities and unwavering dedication. We proudly applaud their exceptional success. Our students' commitment, perseverance and diligence throughout their studies are deeply appreciated. Their resilience and pursuit of excellence are truly admirable — qualities we believe will serve them well in their future endeavours.

Our achievements in mathematic modelling continue to be impressive. At the 10th International Mathematical Modeling Challenge (International Contest of Greater China), the team comprising Ching Helen (4W 10), Li Ruyi (4W 26) and Jiang Yolanda Pak Yin (5W 12) won the Outstanding Award. In another prestigious competition, the High School Mathematical Contest in Modeling (HiMCM 2023), our team of Wong Hoi Ching (3U 18), Li Yat Nok (5U 19), Pan Yam Yi (5U 23) and Lam Ho Ke (5W 18) won the Honourable Mention Award.

Other major achievements in various competitions are listed below:

1. China Girls' Mathematical Olympiad (CGMO) 2023
Silver Medal: Chow Tsz Yau, Li Ruyi and Wu Bailing
Bronze Medal: Zhang Xinyan
2. The 10th Annual International Mathematical Modeling Challenge (IMMC): The Regional Contest of Greater China
Finalist Award:
team comprising: Ching Helen, Jiang Yolanda Pak Yin and Li Ruyi

Outstanding Award:
team comprising: Chan Sze Wing, Gu Sirui Grace,
Luk Cheuk Yiu Sylvia and Xiao Jiaqi

Meritorious Award:
team comprising: Cheung Hoi Yin Ariel, Ho Tsz Yan Antonia,
Leung Hoi Shun and Mai Polly
3. The 10th International Mathematical Modeling Challenge (IMMC): The International Contest of Greater China
Outstanding Award:
team comprising: Ching Helen, Jiang Yolanda Pak Yin and Li Ruyi

Meritorious Award:
team comprising: Chan Sze Wing, Gu Sirui Grace,
Luk Cheuk Yiu Sylvia and Xiao Jiaqi

Honourable Mention:
team comprising: Cheung Hoi Yin Ariel, Ho Tsz Yan Antonia,
Leung Hoi Shun and Mai Polly

4. The 26th High School Mathematical Contest in Modeling (HiMCM 2023)
Honourable Mention:
team comprising: Lam Ho Ke , Li Yat Nok, Pan Yam Yi and
Wong Hoi Ching

5. 2023 – 2024 Statistical Project Competition for Secondary School Students
Junior Section First Prize:
team comprising: Chan Yuen Kay, Ip Hei Yiu Greta,
Lee Andrea Wing Hei and Tso Harmony Hing Ching

Junior Section Second Prize: Wong Yan Kiu

Senior Section Distinguished Prize:
team comprising: Woo Yan Yan, Cheuk Nim Yan, Kwan Ming Wai and
Xiao Jiaqi

Senior Section Prize for the Best Index Application:
team comprising: Cheung Loria Hei Yue and Fung Yun Ying Annie

6. Mathematics Project Competition for Secondary Schools 2023 – 2024
Category A (Junior Secondary Project) Good Performance:
team comprising: Au Wing Hei Jazlyn, Chien Yanoch and Ma Yihan Helena

Category B (Secondary 1 Mini-project) Good Performance:
team comprising: Chan Hay Yee Jessy, Lam Yu Yan, Li Kexin,
So Tsz Yu Tiffany, Wong Ching Laam and
Wong Hei Tung

7. Mathematics Book Report Competition for Secondary Schools (2023 – 2024)
Achievement Award: Kwan Wai Ki and Mai Polly

8. Hong Kong Mathematics Creative Problem Solving Competition for Secondary Schools (2023 – 2024)
Merit Award:
team comprising: So Tsz Yu Tiffany, Wong Hei Lam , Wong Hei Tung and
Zheng Ziling Linnie

9. International Mathematical Olympiad Preliminary Selection Contest – Hong Kong 2024
Silver Award: Li Ruyi

Honourable Mention: Ip Wing Chun

10. The 41st Hong Kong Mathematics Olympiad (HKMO)
Winner in Kowloon Region 2:
team comprising: Jiang Yolanda Pak Yin, Li Ruyi, Li Sze Wing Jennifer and
Xiao Jiaqi

First Class Honour: Li Ruyi

Third Class Honour: Jiang Yolanda Pak Yin, Li Sze Wing Jennifer and Xiao Jiaqi

11. The 26th Hong Kong Mathematical High Achievers Selection Contest

Team Merit Award:

team comprising: Au Wing Hei Jazlyn, Chau Yu Yiu Zabrina,
Lai Chi Hei, Mai Polly and Zhang Xinyan

Second Class Award: Au Wing Hei Jazlyn, Chau Yu Yiu Zabrina, Lai Chi Hei,
Mai Polly and Zhang Xinyan

12. The 5th Centennial Schools Mathematics Competition

Honourable Prize: Li Ruyi

13. National Hua Luo Geng Cup Mathematics Competition 2024 (Hong Kong region)

Third Class Award: Chan Pui Kei

14. Canadian Mathematics Contests

Top Scorers:

Gauss Contest: Li Kexin and Zhang Tsz Ki

Pascal Contest: Lee Nancy

Cayley Contest: He Lok Yiu

15. American Mathematics Competitions

Distinction: Li Ruyi, Liu Zuri Jade and Zhang Tsz Ki

16. American Math Olympiad

Bronze Award: Chan Hay Yee Jessy, Chan Hoi Yin, Ching Helen ,
Wong Hei Tung, Wong Hoi Ching and Zhang Tsz Ki

17. 2024 Hong Kong Mathematics Kangaroo Contest

Grade 9 Third Prize: Wong Hoi Ching

Grade 10 First Prize: Li Ruyi

Second Prize: Liu Zuri Jade

Grade 11 Second Prize: Jiang Yolanda Pak Yin

Third Prize: Liu Tsz Yu

18. True Light Girls' Invitational Mathematics Contest 2023

Group Champion:

team comprising: Chien Yanoch, Li Ruyi, Liu Zuri Jade and Zhang Xinyan

19. Asia International Mathematical Olympiad Open Contest – Semi-Finals 2024

Gold Award: Chan Hay Yee Jessy, Chau Yu Yiu Zabrina, So Tsz Yu Tiffany,
Wong Hoi Ching and Xu Letao Ella

20. 「華夏盃」全國數學奧林匹克邀請賽 2024 晉級賽

特等獎: Zheng Ziling Linnie

21. 「華夏盃」全國數學奧林匹克邀請賽 2024 總決賽

一等獎: Chan Hay Yee Jessy, So Tsz Yu Tiffany, Wong Hei Tung,

Wu Xiangying and Zheng Ziling Linnie

Despite the challenges ahead, our dedicated team of teachers remains committed to providing excellent mathematics education. We will continue to work diligently, using our collective expertise and passion for teaching to overcome obstacles. We are confident that with our ongoing dedication, we will not only maintain but also enhance the quality of mathematics education at DGS.

I must extend my heartfelt gratitude to my extraordinary team of teachers. Their tireless efforts and innovative approaches continue to shape our students' minds and their dedication is truly commendable. Equally important, I wish to express my sincere appreciation to our Headmistress as her unwavering support and visionary leadership have been instrumental in creating an environment where both teachers and students can thrive.

Together, we are building a strong foundation for mathematical excellence at DGS.