

## Frontline Experience Sharing: Gifted Education Implementation

# Sharing on Nurturing Mathematically Gifted Students at School



Moreover, I have valued sharing my experience in implementing Mathematics pull-out programmes and managing the GE development at school on various occasions such as sharing sessions on

- “Your Gifts Our Future” organised by The Hong Kong Academy for the Gifted Education (HKAGE) and
- “Gifted Primary Mathematics Programme (Hong Kong East)” co-organised by the HKAGE, HKASME and my school, SKH Li Fook Hing Secondary School (LFH).

In these sessions, I shared my experience in identifying and nurturing mathematically gifted students. All these have inspired me to find possible ways to launch gifted programmes at school which meet the needs of gifted students. In addition, the skills both in designing the GE programmes and teaching the gifted have been strengthened.

Over the years, I have meticulously made contributions to nurturing the next generation by exploring their talents in various areas. Being the **Head of Gifted Education Committee** at school, I have shared with my colleagues and other working groups the belief that every child has his or her own uniqueness. The prominent things that we have

to do are to unlock their potential, stimulate their thinking and realise their talents. By carrying out the Mathematics pull-out programmes and some school-based gifted education (GE) implementations, making strong bonds with off-site support and good connections with parents, both teachers and parents now know that students can fly up high in the unbounded learning sky.



### Towards New Horizons

To provide advanced and extensive learning experiences to the LFH students, the school has recently set up a GE programme entitled **“Mathematics Pull-out”**, an outreach entity and also an arm of “Mathematics Club @ LFH” under the Mathematics Department. With the establishment of this GE programme, the interest and competence in Mathematics of the LFH students, especially for those who are precociously mathematical, have been further enhanced and nurtured.

In general, the LFH students have an affinity to Mathematics, and most of them are willing to attempt challenging questions. To instill in students a sense of appreciation of Mathematics in its relation to our everyday life, a total of 12 interactive and inspiring Mathematics talks were organised by Mathematics Club during the assemblies throughout the years 2008-10, and included topics such as “Game Theory”, “Make Mathematics Cool in

Life”, “Sampling Methods and Statistical Surveys”, “Be a Smart Statistics User”, “Mathematics & Image Processing”, “Golden Ratios”, “Mathematics Paradox” and “Mathematics and Magic”. They have facilitated students’ learning and broadened their horizons.

The **“Mathematics Pull-out”** programme aims to provide students with opportunities to learn areas on advanced Mathematics that may not be covered in the school curriculum, and to encourage those who have a strong interest in Mathematics to further develop their potential. Students are stimulated through the interactions with other high-caliber classmates/mental peers in the collaboration of using problem-based learning (PBL) strategies. Through syndicated discussion and interactive modes of learning, students may experience the learning environment through an exploratory approach from which their higher order thinking skills are enhanced and special problem-solving techniques are consolidated.

### Infusing GE Through Mathematics Activities

Being one of the most popular clubs at LFH, the Mathematics Club takes conventional pedagogies to another level and dovetails them with students’ interests, boosting their interest and enthusiasm for learning and fostering their sense of belonging to the school. Serving as tutors, senior form students are trained to help junior ones (as in the Big-Brother & Sister Scheme) and they also give help in the training and coordination work of the Mathematics extra-curricular activities.

**“Mathematics Mind Challenger”** is composed of several Mathematics game stalls promoting activity-based learning. It enables students to learn Mathematics actively. It brings home the effectiveness of learning through hands-on activities and solving daily life problems, so that students are aware that Mathematics is all around us. For example, we have a stall which alerts students to some Mathematics Principles (such as Algebraic Operation, Probability, Theories on Divisibility and Remainder) behind the card tricks through magic performances.

Mathematics Relay, Rummikub, Sudoku, Make 24 and “BLOKUS” Competitions are the internal Mathematics contests organised for junior form students in the Mathematics Week. During the specified period of time, on top of various Mathematics enrichments, all of them are exposed to some inter-class Mathematics tournaments in which participants need to work in teams to solve some assigned Mathematics tasks involving Logical-Mathematical Reasoning Questions, Paper-folding, Mathematics Board Games, and so on.

I believe we are moving on the right track and things are unfolding in a satisfactory manner. We pledge to do our very best for the students and we are looking forward to more prosperous years to come.

Lastly, I am more than happy to share some useful resources used in our “Gifted Primary Mathematics Programme (Hong Kong East)” and school-based Mathematics pull-out programmes below.

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Head of Mathematics Department and  
GE Committee

SKH Li Fook Hing Secondary School

Name / Type	Website
1. Blokus	<a href="http://www.blokus.com/">http://www.blokus.com/</a>
2. Blokus-World Tour	<a href="http://www.blokusworldtour.com/">http://www.blokusworldtour.com/</a>
3. Game Plan (in Chinese)	<a href="http://www.gameplan.com.hk/big5/home.asp">http://www.gameplan.com.hk/big5/home.asp</a>
4. 香港桌上遊戲學會 (in Chinese)	<a href="http://www.hkboardgame.com/index.php?showoldetails=no">http://www.hkboardgame.com/index.php?showoldetails=no</a>
5. Free Board game	<a href="http://www.freeboardgames.info/">http://www.freeboardgames.info/</a>
6. Boardgames.com	<a href="http://www.boardgames.com/familygames.html">http://www.boardgames.com/familygames.html</a>
7. Mathematics game for kids	<a href="http://www.coolmath4kids.com/">http://www.coolmath4kids.com/</a>
8. Mathematics game for kids	<a href="http://www.learninggamesforkids.com/math_games.html">http://www.learninggamesforkids.com/math_games.html</a>
9. Primary Mathematics game	<a href="http://www.primarygames.com/math.htm">http://www.primarygames.com/math.htm</a>
10. Free Mathematics games for kids	<a href="http://www.kidsnumbers.com/">http://www.kidsnumbers.com/</a>



培育數學資優生：

# 聖公會李福慶中學

## 分享 (摘要)



**筆**者楊定邦老師從事數學教育多年，一直致力為學生提供適切的培育，讓他們盡展潛能。楊老師認為通過實踐資優教育的理念以及與同業交流，讓他更了解數學資優生的特質及需要，亦使他進一步認識怎樣設計課程，以切合這群學生的需要。

對於培育數學潛能高或資優的學生，楊老師現在任教的聖公會李福慶中學積極推動及籌辦不同的學習活動或課程，務求給予校內數學學習能力較強的同學更多切磋砥礪及互相激發思維的機會。例如該校的數學學會最近開展了一項名

為 Mathematics Pull-out 的數學抽離式課程，內容以提升學生的高階數學思維和解決問題的能力為主，透過共同討論及解決富挑戰性的數學問題，以加強同學互動交流，深化學習層次，並且滿足這一群擅於縝密思維和推理的數學資優生的學習需要。

此外，為了讓學生認識怎樣將數學應用於日常生活及提高他們學習數學的興趣，該校在過去兩年的早會上，讓數學學會的學生主持了十二場富趣味性的數學講座，例如「數學與魔術」及「數學遊戲理論」等，讓同學從新的角度認識數學及它的有趣之處。該學會亦定期舉辦

「數學挑戰站」(Mathematics Mind Challenger)攤位遊戲，透過一些手腦並用的活動或日常生活的數學解難問題，以輕鬆的手法啓導同學發展高階思維，而這些活動亦有助提升學生的抽象思維。

最後，筆者介紹了一些該校曾參考及應用的數學教學資源，與各位同工分享。

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