

For discussion on 11 April 2016

## **Legislative Council Panel on Education**

### **Gifted Education Fund**

#### **Purpose**

In the 2016 Policy Address, the Chief Executive announced the setting up of an \$800 million Gifted Education Fund (GE Fund) to nurture more gifted students in an effort to enrich the talent pool and enhance the competitiveness of Hong Kong. This paper sets out the key features of gifted education and the proposed GE Fund.

#### **Background**

##### ***Gifted education provision in Hong Kong***

2. Gifted education in Hong Kong adopts an inclusive approach for accommodating learner diversity. This is premised on the belief that all children have multiple intelligences that can be fully developed when given the learning opportunities; and that some children may have intelligences or talents that are better developed than others. If not given proper attention and nurturing, such talents may go unnoticed and the related potential untapped. A community which identifies and develops such talents in a systematic and invigorating manner will unleash the true potential of its human capital. Hong Kong needs to develop, through gifted education, a rich pool of talents in different fields to support the multi-faceted growth of our economy.

3. The gifted education provision operates within a three-tier framework promulgated in 2000, which underlines **Gifted Education for ALL, Education for the Gifted** (Appendix A gives detailed elaboration on the framework) –

- (a) Level 1 refers to using pedagogies that could tap the potential of students in creativity, critical thinking, problem solving or leadership in the classroom;
- (b) Level 2 refers to offering pull-out programmes in disciplinary or interdisciplinary areas for the more able students within the school; and
- (c) Level 3 refers to the provision of learning opportunities for the exceptionally gifted students in the form of specialist training outside the school setting.

4. Schools provide school-based gifted education programmes and activities at Levels 1 and 2 under the support of the Education Bureau (EDB), which includes offering Professional Development Programmes (PDP) to empower school teachers to design and implement school-based gifted education programmes through giving them curriculum resources and professional consultancy services. Over the years, the EDB has been offering around 50 PDP every year. Other professional exchange platforms in the form of conferences and school visits are also provided to encourage exchange of experiences and resources amongst schools. The EDB also offers web-based programmes, territory-wide competitions and related workshops for students. Financial resources in the form of grants such as the Capacity Enhancement Grant and Diversity Learning Grant are provided to enable schools to cater for the needs of gifted students at Levels 1 and 2. In the Gifted Education Landscape Study conducted by the EDB in 2015, it is reported that 60% and 85% of schools are engaging in Levels 1 and Level 2 school-based gifted education programmes respectively. The effort at Levels 1 and 2 expended on gifted education by schools and their strong leadership have led to emergence of a critical mass of schools with excellent performance in certain areas, such as STEM (science, technology, engineering and mathematics) and languages. These schools, which have become "centres of excellence" in the respective areas, share their expertise, experience and best practices with other schools with a view to boosting the knowledge base and performance of all. Schools also nominate exceptionally gifted students to take part in

Level 3 training. The EDB will continue to support teachers and schools in implementing their school-based gifted education programmes and activities. Details of services provided by the EDB are set out in **Appendix B**.

5. In relation to Level 3 training, the then Chief Executive announced in his 2006-07 Policy Address the establishment of the Hong Kong Academy for Gifted Education (HKAGE) to provide off-site programmes for students with exceptional talents, and to promote the concepts and practices of gifted education to support teachers and parents. The HKAGE now provides more structured, articulated and challenging Level 3 learning programmes and activities for exceptionally gifted students at both primary and secondary levels.

### ***HKAGE***

6. The HKAGE was established as a private company limited by guarantee in 2008 with a start-up funding of \$200 million which comprised a donation of \$100 million from Sir Joseph Hotung and a one-off grant of \$100 million approved by the Finance Committee(FC) vide FGC(2006-07)37 in January 2007. This \$200 million start-up funding has been a major source of income for supporting the operation of the HKAGE. A Board of Directors is formed as its overall governing body and is responsible for directing and overseeing the affairs and business of the HKAGE. The Board comprises twelve members, of which at least one shall be from each of the following five categories but the total number shall not be more than eight: (i) tertiary institution; (ii) the school sector; (iii) the business sector; (iv) parent representative; and (v) psychologist. In addition, there shall be (vi) one member from the Fung Hon Chu Education Trust Fund; (vii) one member nominated by the Donor; and (viii) two ex-officio members representing the EDB.

7. The HKAGE has fulfilled its important function of providing quality gifted education programmes for the exceptionally gifted students in a highly professional manner. Since its establishment, the number of student members has increased from around 1 200 in the 2008/09 school

year to around 8 000<sup>1</sup> in the 2014/15 school year while the number of student programmes has also increased from 45 in the 2008/09 school year to almost 310 in the 2014/15 school year. Up to the 2014/15 school year, an accumulated total of over 13 200<sup>1</sup> members have been admitted to the HKAGE and it has served over 57 300 students (frequency count) in over 1 200 student programmes. The majority of these students are from aided and government schools. Schools are continuously encouraged to nominate their students to participate in the programmes offered by the HKAGE. In the 2014/15 school year, about 39% of primary schools and 50% of secondary schools have nominated their students to the HKAGE, an increase of 17% at the primary level whilst more or less the same for the secondary.

8. Apart from providing programmes and services for students, the HKAGE also provides services for parents and teachers in a holistic way. For instance, the HKAGE organises thematic seminars, workshops and an online Foundation Course in Gifted Education for teachers to complement the work of the EDB. In the 2008/09 to 2014/15 school years, a total of about 400 teacher training programmes were conducted for over 20 000 teachers (frequency count). Within the same period, a total of around 350 parent education programmes serving over 29 000 parents of gifted students (frequency count) were offered. User-friendly publications targeted at parents are also published and disseminated on the Internet. On the whole, the overall evaluation value of parent programmes is about 3.4 on a 4- point Likert scale and that of teacher training programmes is about 3.3.

9. The work of HKAGE has borne fruit. During the period from 2008 to 2014, students who have benefitted from the programmes of the HKAGE have won a large number of awards (totalling 366) in prestigious international competitions ranging from the International Mathematics Olympiad to International Junior Science Olympiad. To further strengthen its work, the HKAGE has been collaborating with local and overseas experts to offer the programmes for students, teachers and parents. It also

---

<sup>1</sup> 8 000 is the number of student members in 2014/15 school year. 13 200 refers to the accumulated number of members admitted to HKAGE since September 2008. As students graduate from secondary schools, they are no longer members of the HKAGE. However, there are newly admitted members from secondary and primary schools every year.

works with local and overseas organisations on collaborative research projects. The HKAGE endeavours to become a regional gifted education hub to serve the needs of gifted students in Hong Kong and to assume a leading role in the development of gifted education in the Asia Pacific region. Details of the work of the HKAGE can be found in **Appendix C**.

## **Future Development of Gifted Education in Hong Kong**

### ***The Case for Strengthening Gifted Education by the Government***

10. In this twenty first century, all economies, be they mature or growing, vie for top notch human capital to take their development to the next higher level. Nurturing of human capital becomes a high priority of different governments. In Hong Kong, human resources are our most important asset. Fostering gifted education is of pivotal importance to help nurture and enrich Hong Kong's pool of talent, thereby increasing our competitiveness. Talents so nurtured, be they in the field of science, mathematics, arts or language, will help enrich the quality of our manpower to fuel the diversified development of our economy and our status as an international city. They are also potential leaders in the respective fields in future to help chart the way forward for Hong Kong's development. The need for nurturing more talents has been supported by parents, and strongly urged by the business sector and educators. The faster the need could be met, the more beneficial it is to Hong Kong. Otherwise, Hong Kong will be losing out to adjacent economies such as Singapore and South Korea, which are developing very fast in the area. The commitment of the Government to supporting gifted education would promote concerted efforts from different stakeholders to engage in nurturing talents that would eventually contribute to society.

### ***Charting the Way Forward on Gifted Education***

11. We plan to strengthen gifted education on all fronts encompassing Levels 1 to 3 to achieve greater impact, focus and synergy among the different Levels. First, the Government will improve Level 1 and 2 support at the school level so that more systematic assistance programmes can be offered. For example, the EDB will scale up its support through designing Curriculum Leadership Programmes

particularly for school principals and curriculum leaders so that they can serve as drivers for the development of school-based gifted education. Schools with good experience in school-based gifted education will be identified to join with less experienced schools to form school networks in gifted education to provide the platform for professional exchange among schools. Research projects in gifted education, in particular the evaluation of effectiveness of various new initiatives will also be launched to gather evidence for informing future directives.

### ***Future Development of the HKAGE***

12. Secondly, the HKAGE's work at Level 3 will be strengthened. The HKAGE has recently prepared a development plan for the next ten years in order to enhance the development of gifted education in Hong Kong. The 2020 Vision for the HKAGE is that "*our overarching strategy remains to increase the range and quality of our service provision in our unique position as the only organisation in Hong Kong that links the needs of gifted students, their parents and teachers*". In gist, the main foci of the HKAGE in the next ten years are:

- (a) to continue to develop into a regional hub of its kind with an effective framework for strategic planning and delivery of appropriate programmes to encourage and nurture the exceptionally gifted students;
- (b) to mobilise and steer the effort of parents, teachers, academics and business and community leaders in creating a conducive and enriching learning environment for all gifted students;
- (c) to facilitate the professional development of teachers in the identification and support of gifted students within the school context; and
- (d) to develop, through partnership with like-minded organisations, both locally and in other countries, a

knowledge hub for furthering research on gifted education and the exchange of ideas and best practice.

13. The landscape of gifted education is changing rapidly because of (i) increasing awareness among local organisations/communities of the importance of gifted education; and (ii) globalisation in all areas of education. These changes lead to increasing demands for services for gifted students, and their parents and teachers. In response to these changes, the HKAGE has been offering diverse academic programmes in different domains to cater for the cognitive development of gifted students. Furthermore, non-academic programmes such as affective education programmes and service programmes are also offered to nurture students' affective development. Based on the trend of increasing number of newly admitted students in recent years<sup>2</sup>, it is expected that the total number of members to be served annually will amount to 2% - 2.5%<sup>3</sup> of our student population (10 000 to 12 000 students) by the end of the first stage of the HKAGE's ten-year plan, i.e. the 2019/20 school year. With sufficient resources available, this number may further increase to 5% by the end of the ten-year plan, i.e. the 2024/25 school year. Furthermore, since 2012, various research projects on different aspects of gifted education have been conducted, and the HKAGE will collaborate with different local and overseas parties in research and teacher training in order to broaden the scope and deepen the depth of these projects.

14. The HKAGE plans to provide diversified enrichment programmes in a more systematic manner in future. The programmes are designed with reference to a five-level Curriculum Framework with ascending intellectual demand, and hence much more challenging. New programmes will include advanced career development courses, mentorship programmes and elite international student activities for the

---

<sup>2</sup> The number of newly admitted students in the recent three years is as follows:

2012/13 school year: 2 245,

2013/14 school year: 2 443,

2014/15 school year: 2 799.

<sup>3</sup> Although it is largely held that the percentage of gifted children is around 6-10% of total student population, it is common that gifted education programmes are offered to only a smaller percentage of total student population in many countries/regions. In South-East Asia countries/regions (Singapore, Taiwan and South Korea) around 1-2% of student population would be identified as gifted for receiving special gifted programmes. In Europe and US, around 3-10% may be identified for receiving special services arrangements, usually including school-based and non-school based ones.

exceptionally gifted students. The HKAGE will keep exploring new programmes to provide more learning opportunities to maximise the potential of students at Level 3. Besides, the HKAGE will scale up the provision of programmes to cater for the affective needs of these exceptionally gifted students. To cater for the needs of primary school students, special affective education and subject elective courses will be designed for them.

15. With the ultimate goal of developing itself into a regional gifted education hub which will in turn enhance Hong Kong's capacity to attract talents, the HKAGE will implement the following initiatives:

- (a) sharing professional and practical knowledge in gifted education derived from research;
- (b) providing training/activities for students with a view to preparing them for taking part in international competitions and exchange activities;
- (c) adopting best practices in gifted education after gaining knowledge of such practices through taking an active part in international conferences, researches and exchange on gifted education;
- (d) disseminating knowledge and good practices on gifted education for local and international practitioners' reference; and
- (e) partnering with tertiary institutions and professional organisations in regional/international events organised in Hong Kong/the Mainland and the Asian Region for knowledge exchange and transfer.

## ***Setting up the Advisory Committee on Gifted Education & the Gifted Education Fund***

16. Apart from the above initiatives as set out in paras 11 to 15, we need to take a strategic and holistic view on the overall medium to long term development of gifted education in Hong Kong covering Levels 1 to 3 to ensure it would bring out the best of our children who will be suitably nurtured, motivated and encouraged to contribute to Hong Kong's future growth and who themselves will achieve balanced and whole person growth at the personal level. To tap the views and expertise of the relevant stakeholders, we plan to set up a committee to advise the Secretary for Education (SED) on the development of gifted education. The committee will be chaired by a non-official member and will comprise representatives from tertiary institutions, schools, the public and professional sector, experts with knowledge on local and overseas gifted education practices, educational/youth bodies, and ex-officio members from the EDB. The committee will advise SED on the strategic development of gifted education in Hong Kong, as well as new measures and initiatives for promoting and strengthening gifted education.

17. The future work on gifted education set out in paras 11 to 15 as well as the proposals to be generated by the Advisory Committee on Gifted Education (the Committee), will require additional resources. In particular, as the HKAGE is actively expanding its services to reach a wider population of students via more diverse programmes, the HKAGE faces a severe shortage of fund and its existing financial resources would unlikely sustain its operation beyond October 2017. The total expenditures for the HKAGE in Years 2013-14 and 2014-15 were \$30 million and \$34.5 million respectively. Given the good track record of the HKAGE and its unique role in providing gifted education programmes at Level 3, it is of critical importance to provide a stable source of income to support its long term and on-going initiatives. In parallel, the HKAGE will also explore other sources of funding such as seeking donations and sponsorship from the business sector and charging fees for its programmes<sup>4</sup>.

18. To provide the necessary resources for fostering gifted education, we propose to set up a GE Fund of \$800 million. The Fund will

---

<sup>4</sup> At present, the student programmes offered by HKAGE are all free.

be used to support the operation of HKAGE and strengthen school-based gifted education programmes that meet our policy objectives. The GE Fund will be established as a trust fund under the Permanent Secretary for Education Incorporated as its trustee. It will be managed in accordance with a trust deed which will stipulate the framework and the salient features necessary for its proper management and administration. The administrative cost for the proposals recommended by the Committee will be absorbed by the GE Fund while the general administrative cost of the Committee will be absorbed by the EDB. The annual audited accounts will be tabled at the Legislative Council (LegCo). The Advisory Committee on Gifted Education will also advise SED on the custody and use of the GE Fund.

### **Financial Implications**

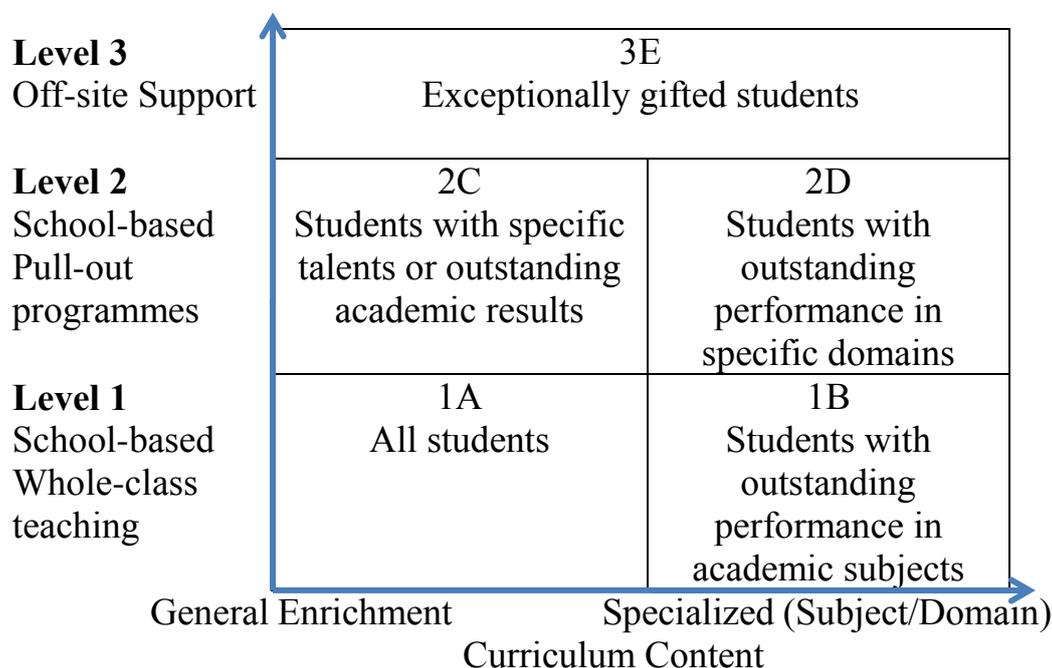
19. The Government has earmarked sufficient funds in the 2016-17 draft Estimates for the establishment of the GE Fund. Subject to the approval of the FC of LegCo, we will create a new commitment of \$800 million for setting up the GE Fund and make appropriate investment arrangements. The GE Fund, together with its expected investment return based on 3 to 4% per annum, would provide a regular revenue source to support the operation of the HKAGE as well as new initiatives on gifted education in schools deemed necessary in a longer term.

### **Advice Sought**

20. Subject to Members' view on our proposal, we will seek funding approval from the FC for creating a new commitment for setting up the GE Fund in due course.

**Education Bureau**  
**April 2016**

**The Three-tier Implementation Framework for Gifted Education**



Since 2000, the (EDB) has adopted an *inclusive approach* of accommodating learner diversity, through three levels of engagement of mainstream schools, for providing gifted students with appropriate challenges and learning opportunities. The three-tier operation mode facilitates the implementation of the gifted education policy with classroom-based learning in schools (Level 1), supplemented by school-based pull-out enrichment and extension programmes (Level 2), as well as off-site intensive support services (Level 3).

**Level 1**

**A:** immersion of the three core elements advocated in gifted education, i.e. higher order thinking skills, creativity and personal-social competence in the curriculum for ALL students in regular classrooms.

**B:** differentiated teaching through appropriate grouping of students to meet the different needs of the groups with enrichment and extension of curriculum across ALL subjects in regular classrooms.

**Level 2**

C: pull-out programmes of generic nature conducted outside the regular classroom to allow systematic training of a homogeneous group of students.

D: pull-out programme of specific nature (e.g. mathematics, art) conducted outside the regular classroom to allow systematic training of students with outstanding performance in specific areas.

**Level 3**

E: individualised educational arrangement for the exceptionally gifted students who requires resource support outside the regular school setting (e.g. counselling, mentorship, early entry to advanced class).

## **Current support for schools by the Education Bureau**

According to the **Gifted Education Landscape Study** conducted by the EDB in 2015, around 80% of schools in the territory have been providing school-based gifted education programmes for students. Amongst these, 60% of schools embark on Level 1 whole class teaching while 85% of schools are involved in Level 2 pull-out programmes.

Although the coverage of the Level 1 provision varies from school to school, this provision is generally made in upper primary to junior secondary involving teachers from different Key Learning Areas (KLA). Level 2 pull-out programmes cover not only traditional academic domains but also leadership training, social skills development as well as training in management of emotion. These programmes are especially essential for gifted students who may have special affective needs that are different from their counter parts in schools.

### **I. Support for teachers**

The EDB has been empowering school teachers in school-based gifted education provision through various measures including the following:

- (a) Professional development programmes for teachers
  - Online Foundation Course in Gifted Education
  - KLA-based enhancement programmes for subject panel chairs and frontline teachers
  - Advanced modular courses for Gifted Education managers and Gifted Education coordinators
  - Biennial Gifted Education Conference
  - Competition-related workshops
  
- (b) Production of education resources
  - Over 100 resource packages in different domains (languages, maths, sciences, humanities, affective education)
  - Guidelines on School-based Gifted Development Programmes
  - Planning and Implementation of School-based Gifted Education- A Web-based Information Toolkit

- Reference Manual in Implementing Gifted Education in School Acceleration Programmes
  - Gifted Education In Hong Kong – Information Booklet
- (c) Networking of teachers for professional exchanges
- Gifted Education Teachers Network (in different domains)

The table below shows the statistics of teacher receiving training from the EDB in the past three years:

<b>School Year</b>	<b>Primary School Teachers (man-times)</b>	<b>Secondary School Teachers (man-times)</b>
2012/13	965	532
2013/14	1 033	656
2014/15	2 004	887

## II. Support for gifted students

- (a) The EDB offers Web-based Learning Courses for gifted students nominated by schools. The table below shows the enrolment statistics for the past three school years:

	<b>Enrolment</b>		
	<b>2012/13</b>	<b>2013/14</b>	<b>2014/15</b>
Astronomy	946	1 181	1 686
Earth Science	974	1 047	1 539
Mathematics	1 274	1 573	2 207
Palaeontology	681	1 000	1 516

- (b) Territory-wide competitions and related student/teacher training workshops are also organised or co-organised by the EDB.

	<b>Student Participation annually(average)</b>
Budding Poets Award	About 1 470
Budding Scientists Award	About 640

Creative Problem Solving in Mathematics	About 1 000
Elite Students Project in Chinese language	About 690
Budding Innovators Award	About 250
Innovation in Science and Environmental Studies	About 840

**Work of HKAGE (2008-2015)**

The early pledge of the HKAGE placed emphasis on relatively simple quantitative targets. Targets were set to *provide programmes for 10 000 to 12 000 students during the period of 2007-2010<sup>5</sup>, offer professional training to around 600 teachers each year and serve around 5 000 parents every year.*

The HKAGE has accomplished the above pledge through providing a variety of programmes. From 2008-2015, a large number of students, parents and teachers have been served by different HKAGE programmes. As a result, a large number of parents with/without gifted kids have gained a good understanding of gifted education which is practised in a rather large number of schools.

*Many of the programmes the HKAGE offers are of high quality and are commended by students, teachers and parents.* For example, the training of students to participate in international competitions such as the International Mathematics and the International Physics Olympiad. Very good overall results have been obtained in these competitions as seen in the section on “Achievements in Competitions” below.

**Programmes**

*A. Student Programme*

- Since the establishment of the HKAGE, the number of student programmes has increased from 45 in 2008 to 310 in 2014 with primary programmes developed since 2012.

By 2014/15 school year, an accumulated total of over 13 200 students members aged 10 – 18 years had been admitted to the HKAGE and the Academy had served 57 300 participants (frequency count) in 1 200 programmes.

---

<sup>5</sup> HKAGE was established in 2007 as pledged, but only in full implementation in 2008 as there was a lead time to hire staff and to organise courses. However, the pledge of its services as stated in the LegCo papers were on the whole achieved in the period 2008-2011.

### *B. Parent Programme*

- Between April 2008 and August 2015, around 350 programmes were organised for 29 000 parents (frequency count). The HKAGE also runs a Consultation and Assessment Centre that welcomes enquiries through hotline and email. For complex cases, face-to-face consultation and counselling sessions are provided.

### *C. Teachers' Professional Development*

- Between 2008/09 and 2014/15 school years, around 400 programmes were organised for 20 000 teachers (frequency count).

### *D. Public Lectures and Conferences:*

- **The Annual Hotung Lecture** (since 2010) and **the Biennial GE Conference** (since 2009) are signature events of the HKAGE where overseas speakers are invited to share their insights about gifted education with local educators.
- **The Student Conference** was first launched in 2013 to showcase students' study projects to demonstrate their learning achievements in various fields, and for gifted students to experience the exchange of knowledge and skills and develop friendship.
- **The Parent Conference** is held every two years to provide opportunities for parents to exchange ideas among themselves and learn from world-wide experts in gifted education.

## **Achievements in Competitions**

### *A) Results of International Competitions*

A number of awards have been gained in important international and regional competitions throughout the years (from 2008-2014). Major Competitions included:

- International Mathematics Olympiad (IMO)
- China Mathematical Olympiad (CMO)
- China Girls Mathematical Olympiad (CGMO)
- China Western Mathematical Invitation (CWMI)
- China Western Mathematical Olympiad (CWMO)
- International Physics Olympiad (IPhO)
- Asian Physics Olympiad (APhO)

- International Junior Science Olympiad (IJSO)
- International Olympiad in Informatics (IOI)
- National Olympiad in Informatics (NOI)
- Asia-Pacific Informatics Olympiad (APIO)
- Asian Pacific Mathematics Olympiad (APMO)

The numbers of awards received from 2008 to 2014 are as follows:

Gold: 43                  Silver: 144                  Bronze: 179

B) Territory-wide competitions organised by the EDB and the HKAGE leading to national and/or international competitions:

School Year	Name of Competition	Number of Participating schools	Number of Participating students
		Secondary	Secondary
2011/12	IMO Preliminary Selection Contest	129	640
	HK Physics Olympiad	104	1 174
	IJSO-HK Screening	77	352
2012/13	IMO Preliminary Selection Contest	100	504
	HK Physics Olympiad	114	1 143
	IJSO-HK Screening	92	462
2013/14	IMO Preliminary Selection Contest	117	582
	HK Physics Olympiad	133	1 118
	IJSO-HK Screening	118	598