

Po Leung Kuk Lee Shing Pik College

Report on Use of One-off Grant Secondary Schools for the Promotion of STEM Education for the 2018/19 academic year

Major area of Concern (Teacher-in-charge)	Resources required	Success Criteria	Methods of Evaluation	Report and Evaluation
Subject: Computer Literacy	Actual expenditure: \$31,200	Over 80% of the relevant students complete the simple tasks in the lessons.	Observation of students' performances and teachers' comments.	It was used to purchase components of LEGO EV3 such as motors and ultrasonic sensors. Having such enhancement, we would be able to ask students to do more difficult tasks such as accurate turning and control LEGO car to avoid obstacles. Unlike last year, the tasks this year were more demanding and only about 25% of them could achieve it. We would revise the requirements and design of the assessments so that students could master them more easily. Having enhanced the components, students could design and build LEGO to achieve much more different tasks in the future though.
Science Department	Actual expenditure: \$37,300	Over 80% of the students indicate the arrangement can enhance their knowledge through the latest STEM information.	Analysis of data collected through questionnaires.	Since the Tour Guide System is bought just before the end of the academic year 2018-19, it has been used once in September, 2019. It has been used in a F.1 Integrated Science lesson to create an interactive lesson. Through a simple verbal evaluation of the relevant students, 66.7% of them reflect that they have experienced an interactive lesson about the introduction of Science. The system will be used to display scientific knowledge or news during recesses and lunch time in the playground this academic year.
Science Department	Actual expenditure: \$4,000	a. Students complete the courses with at least 85% of attendance rate shown in the record of learning. b. Over 80% of the selected students indicate that the activities organized in the courses, workshops or competitions help enhance their knowledge and/ or skill in relevant discipline of STEM.	a. Attendance record. b. Analysis of data collected through the verbal evaluations of the participants and teachers' comments.	a. 10 F.4 students have joined a 7-day science camp called "高校科學營 2019" in The Peking University. 9 of the participants have a 100% attendance rate while 1 participant was absent from the camp because of illness. b. Programmes such as lectures concerning research method, advanced science laboratory visits, advanced science talks, exchange activities have been organized in the Peking University. (1) All the participants (100%) have reflected that they have a higher exposure to advanced science or apparatus. However, it would be better if the participants could have an opportunity to use the apparatus. (2) 7 of the participants (77.8%) stated that they had a good experience in knowing the science learning and learning attitude in mainland during exchange. Few of them have enhanced their determination in learning and studying. (3) 7 of the participants (77.8%) agreed that the activities have invoked their initiative in learning science and 5 of them (55.6%) have known more about the prospects in studying science in mainland China.


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Science Department	Actual expenditure: \$1,980	Over 80% of the selected students indicate that the activities organized in the courses, workshops or competitions help enhance their knowledge and/ or skill in relevant discipline of STEM.	Analysis of data collected through verbal evaluations of the participants and teachers' comments.	30 F.4 and 3 F.3 students were selected to participate in a forensic workshop: 血證 organized by an external provider. In the programme, students have learnt some techniques on identification of blood and some interpretation skills on different scenarios of murders through the distribution of blood droplets. 30 students (90.9%) reflected that the programme has enriched their knowledge in both Biology and Chemistry and has provided them a chance to experience the integration of knowledge in different disciplines during the process of problem solving.
Mathematics Department	Actual expenditure: \$700	a. 12 students participated in the competition. b. Over 80% of the selected students finished the competition.	a. Attendance record. b. Analysis of result collected.	a. 12 students were chosen to participate in the 18th Pui Ching Invitational Mathematics Competition. b. 100% of the students finished the competition and 1 of them was awarded a prize.
	Actual expenditure: \$4,950	a. 15 students participated in the competition. b. Over 80% of the selected students finished the competition.	a. Attendance record. b. Analysis of result collected.	a. 15 students were chosen to participate in the AIMO Open (Semi-Final). b. 100% of the students finished the competition and 11 of them were awarded prizes.
Science Department	Actual expenditure: \$2,160	Over 80% of the selected students indicate that the activities organized in the competition help enhance their knowledge and/ or skill in relevant discipline of STEM.	Analysis of data collected through verbal evaluations of the participants and teachers' comments.	15 students were recommended by subject teachers (Biology, Chemistry and Physics) to take part in the Secondary School Mathematics and Science Competition (SSMSC) organized by The Polytechnic University of Hong Kong. Among the participants, 3 students were awarded with 'high distinction' and 2 students were awarded with 'distinction' and the result is quite encouraging. 83% of the participants reflected that the competition has boosted them in learning the curriculum of corresponding subjects and has provided them more time to familiarize with the DSE curriculum in advance. In addition, 93% of them agreed that the competition has broadened their horizons and widened their views because they have dedicated more effort and time to obtain outstanding result and outcompete other competitors. As a whole, this competition is recommended to those elites in upcoming Form 5 by science teachers.

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Science Department	Actual expenditure: \$1,470	Over 80% of the selected students indicate that the activities organized in the visit help enhance their knowledge and/ or skill in relevant discipline of STEM.	Analysis of data collected through the verbal evaluations of the participants and teachers' comments.	124 F.1 and F.4 Biology students visited the Hong Kong Wetland Park. Junior students were requested to take the stream walk and through their observations, they had to recognize some key features of the ecology for identifying the upstream and downstream. Senior students gained a first glance at the topic Ecosystem, which would be taught in F.5. Through working on assignment booklet which guides the senior students to visit the wetland park, they could explore different aspects of the topic by finding out answers from various facilities in the park. 72% of the junior students and 70% of the senior students have expressed their increased understanding in the topics. All teachers agreed that more students can master the skill and explore more different aspects if a longer time limit is given to the students in completing the task.
Science Department	Actual expenditure: \$9605.4	<ul style="list-style-type: none"> a. At least five traps are designed and the activity is completed successfully. b. Over 80% of the participants indicate that the activity can enhance their knowledge and/or skills in relevant discipline of STEM. 	<ul style="list-style-type: none"> a. Observation of participants' performances. b. Analysis of data collected through the verbal evaluations of the participants. 	<ul style="list-style-type: none"> a. Three training sessions (two on 3D printing and one on electric circuit) and over 10 "trap design and building" gatherings were organized by teacher to the committee members of the Science Club. Finally, eight traps are constructed for the Room Escape Game organized by them. b. 5 groups of students about 30 students joined the game. Most of them said that the game was interesting and enjoyable. According to a polling delivered to the committee members of the Science Club (see appendix), the following shows some analysis: <ul style="list-style-type: none"> (1) When they were asked if they feel experiencing creativity throughout the process, over 90% students said "Agree" or "Strongly agree". (2) Over 80% students felt that the activity let them experience problem solving in team work throughout the process. (3) Over 90% students felt that the activity let them have a hand-on experience of creating something out from idea and make the product successfully through numerous tests and enhancements. (4) Over 80% students felt that the activity let them apply science / physics knowledge. (5) 100% students showed devotion in the activity.

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Science Department	Actual expenditure: \$10,900	Over 80% of the participants indicate that such arrangement can save their time in travelling.	Analysis of data collected through the verbal evaluations of the participants	9 coaches have been booked for travelling between the venues of the event and school. All relevant students indicated that such arrangement was convenient to them especially those activities held right after school or during the school time.
Science Department	Actual expenditure: \$6,153.7	a. Students complete the courses with at least 85% of attendance rate shown in the record of learning. b. Over 80% of the selected students indicate that the activities organized in the courses help enhance their knowledge and/ or skill in relevant discipline of STEM.	a. Attendance record. b. Analysis of data collected through verbal evaluations of the participants and teachers' comments.	Two students were subsidized to apply for two summer science courses in CUHK. The themes of the two courses are astronomy and living organisms in ocean. a. Both students have completed the courses with 100% attendance rate. b. Astronomy course: The student reflected that she has gained a first glance at some advanced astronomical knowledge and through a practical task, she has experienced how to verify an astronomical phenomenon with some practical skills and scientific calculations. Living organisms in ocean: The student stated that she has acquired knowledge about the features and the survival skills of marine creatures, the resource and ways to protect the oceans etc. Both students agreed that the courses were resourceful and aroused their interests in studying the relevant courses in the future.

Balance B/F: \$110,419.10
Total income for the year: \$0.00
Total expenditure for the year: \$110,419.10
Balance C/F: \$0.00

Name of Principal: FUNG Nga Sze, Agnes

Signature: 

Date: 6th September, 2019