

Po Leung Kuk Lee Shing Pik College

Report on Use of One-off Grant to Secondary Schools for the Promotion of STEM Education for the 2017/18 academic year

Major area of Concern (Teacher-in-charge)	Resources required	Success Criteria	Methods of Evaluation	Report and Evaluation
Task Area: Hardware Purchasing				
A. Computer Literacy: (Mr. Chu C.P.)	Budget: \$49,800 Actual Expenditure: \$49,500	Over 80% of the relevant students complete simple tasks by controlling the LEGO EV3 robot.	Analysis of data collected and teachers' comments.	All Form 2 students have tasted the LEGO EV3 robot for 8 lessons. With the increased in the number of LEGO robots, students had more opportunities to control the robot themselves. This aroused students' interests in the relevant topic. More than 90% students could complete four or above with the five-task assignment given. It was worthy to develop more in Form 3 in the coming year.
	Budget: \$10,000 Actual Expenditure: \$9662.5	a. Over 20 students participate in the activities. b. Over 80% of the participants complete the assigned tasks mentioned above.	Analysis of data collected and observation of students' performances.	a. 11 students participated the Arduino course in the second term. b. More than 90% of students could complete four basic tasks and about 50% of them could complete the advanced level assignment. The students reflected that the course has strengthened their science knowledge as well as logical thinking by building up simple circuits with some basic electronic components which they had never tried before.
B. Biology (Mr. Tang Y.M.)	Budget: \$5,000 Actual Expenditure: \$0	a. Over 80% of students indicate that the programme can nourish their knowledge in ecology. b. Over 80% of students indicate that the programme helps enhance their skill in data analysis by graphical method.	Analysis of data collected and observation of students' performances.	a. A basic aquaponics tank has been setup in Biology Lab using equipment found from the previous tank for horseshoe crab. The relevant students showed their interests in knowing its mechanism and the basic knowledge. 81% of the students indicated that such set-up can greatly enhance their learning in the ecology related topic and material cycling. b. Since the setup is a prototype, the concentration of ions is still unstable, data analysis with the aid of electronic devices cannot be carried out yet.

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C. Physics (Mr. Chow C.F.)	Budget: \$6,000 Actual Expenditure: \$6605.53	a. Over 80% of students indicate that the programme can enhance their knowledge and/or skills in carrying out an investigative study with learner-centred approach.	Observation of students' performances.	a. 14 Form 4 students were selected to participate in the programme, Windsurfing plus STEM corner organized by the Physics department. Students were assigned to design some hands-on products, games or models by applying their physics knowledge. According to the questionnaire, all students indicated that the programme has invoked their initiative and/or interests in product design with an investigative approach, the activity has also enhanced their knowledge in Physics. For the windsurfing course, 93% of them say that the course is funny or very funny. Moreover, the teacher observed that the students have learnt earnestly and participated actively in the activities organized.
D. Integrated Science (Mr. Chin. C.W.)	Budget: \$5,000 Actual Expenditure: \$6688.8	a. Over 80% of the participants indicate the activities can enhance their knowledge and/ or skill in relevant discipline of STEM.	Observation of students' performances and students' verbal evaluation.	a. Two groups of Form 2 students (57 students in total) were selected to participate in the STEM programme organized by an external provider. Students were requested to design a glider or hovercraft by applying their relevant science knowledge learnt during science lessons. Besides learning the mechanism of aviation, more than 80% of the students have recognized some of the key factors for gliding longer by building up their gliders with trial-and-error basis. On the other hand, about 85% of the students has successfully embedded the fans into the bodies of their hovercrafts. b. "Solar cart competition - for primary students" was co-organized with Friend of the Earth. 25 teams coming from 9 different primary schools have participated in the competition. 15 Form 3 and 5 Form 5 students were invited to provide technical assistance to the primary students in building up the solar carts. For better preparation, 18 of the students claimed that they have acquired more scientific knowledge, especially on the structures of the solar carts and the welding techniques.

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Task Area: Activities and/or Competition				
A. Science Department (Mr. Chin C.W.)	Budget: \$40,000 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 courses help enhance their knowledge and/or skill in relevant discipline of STEM.	Students' verbal evaluation.	a. 2 students have participated in an exchange programme organized by the International Academy of Management, 「2018 京港無人機交流團」 with 100% attendance rate. b. The 2 participants reflected that the programme has invoked their initiative in knowing more about this advanced technology. On the one hand, they have enhanced their scientific knowledge through learning more basic knowledge and mechanism of aviation in the exchange program. On the other hand, they have enhanced their technological skill through controlling the drone in practical.
B. Science Department (Mr. Chin C.W.)	Budget: \$3,000 Actual Expenditure: \$ 5004.07	a. Over 80% of the selected students indicate that the programmes help enhance their knowledge and/or skill in the relevant discipline of STEM.	Observation of students' performances and teachers' comments.	a. 40 Form 4 students were selected to participate in a forensic workshop: 血證 organized by an external provider. In the program, students have learnt some techniques on identification of blood and some interpretation skill on different scenarios of murders through the distribution of blood droplets. All students reflected that the program has enriched their knowledges in both biology and chemistry and has provided them a chance to experience the integration of knowledges in different disciplines during a problem solving. b. 20 Form 3 students selected by the computer literacy, visual arts and liberal studies department were assigned to design and synthesize a decorated display cupboard. When the display content is selected by an audience, a visual light will be turned on and a voice of description will be broadcasted. The relevant students indicated that such activity has enhanced their knowledge in electricity theoretically and skill in connecting a circuit practically.

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	Budget: \$6,000 Actual Expenditure: \$5,200	a. Over 80% of the selected students indicate that prepared materials for the competition can be transported safely.	Students' verbal evaluation.	a. Coaches are booked for travelling between the venue of the event and school. All relevant students indicated that such arrangement was convenient to them especially for transporting prepared materials for the GreenMech Contest.
C. Mathematics Department (Mr. Cheng W.M.)	Budget: \$4,000 Actual Expenditure: \$4,120	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 course helps enhance their performances during the competition.	Students' verbal evaluation.	a. A good and promising attendance rate, 85%, was recorded in the Mathematical Olympiad Training Course. b. 85% of the students reflected that the programme was useful in helping them improve their answering techniques for the competition. The programme is strongly recommended to be continued for the next academic year.

Balance B/F 2016/2017: \$200,000

Total estimated grant to be received from EDB for 2018/2019: \$0

Total expenditure 2017/2018: \$90,780.9

Balance C/F 2018/2019: \$109,219.1

Name of Principal: FUNG Nga Sze, Agnes

Signature: _____

Date: 27th August, 2018