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保良局羅傑承(一九八三)中學法團校董會

S6/110

發文者：羅穎忠校長

受文者：☐主席兼屬校總校監
☑校監
☑行政總監
☑副行政總監兼替代校董
☑教育總主任兼校董

15 NOV 2019
教育事務部

檔案編號：PLK/ESD/LMY/1920/025　　日　期：12/11/2019

主旨	請核准☑　考慮☐　指示☐　簽署☐　報告☐　備考☐　其他☐ 推動 STEM 教育的一筆過津貼報告 (2018/19)
說明	注意：請逐項詳述要點或用圖表說明，倘有需要請作比較及分析，凡有依據者須列明出處或附影印本。總結亦請作建議及解決辦法。
	背景： 按教育局指引及本校法團校董會最新審批/簽署安排，學校須提交各項學校計劃書及學校報告予法團校董會通過。 現況及建議： 本校已完成推動 STEM 教育的一筆過津貼報告(2018/19)，請法團校董會批核有關報告，詳見附件。 尋求指示： 按建議進行。 附件： 推動 STEM 教育的一筆過津貼報告 2018/19 已於28/11/2019法團校董會傳閱通過 羅穎忠 羅穎忠校長謹呈

教育總主任兼校董簽署	☑批示 ☑傳閱		
副行政總監兼替代校董簽署	☑批示 ☑傳閱	行政總監簽署	☑批示
校監/主席兼屬校總校監簽署	☑批示 ☑傳閱		

☑ 校董傳閱

請各法團校董會校董簽名同意後傳真至 2890 2519 教育事務部【楊健忠教育總主任】兼校董收。保良局教育事務部稍後會安排收回正本。如有問題，可致電 2277 8380 向【楊健忠教育總主任】兼校董查詢。

校董簽名：＿＿＿＿＿＿＿＿＿＿　日期：＿＿＿＿＿＿

其他意見(如適用)：＿＿＿＿＿＿＿＿＿＿

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Po Leung Kuk Lo Kit Sing (1983) College

Evaluation Report on the Use of One-off Grant for the Promotion of STEM Education (2018-2019)

Programme

Aim of the One-off Grant for the Promotion of STEM Education

To procure resources (e.g. teaching aids, consumables, learning and teaching resource materials) and/or upgrade some existing resources for the implementation of STEM-related activities including projects and competitions;

To organize STEM-related activities such as scientific and technological activities or competitions; and

To support students to participate in various STEM-related competitions and/or programmes.

Responsibility

1. School principal as the controller.

2. Program proposals by open nominations. Monitoring by Teacher i/c.:-

One-off Grant for STEM	3D modelling	Mr. Li K T
	Micro:bit related activities -- Rocket Car Competition 2019	Mr. Cheung C W
	4D Frame models in Mathematics	Mr. Cheung C P
	Aquaculture (Biology : Biotechnology)	Ms. Law Y K

Implementation of One-off Grant for STEM 2018-2019

Task Area	Details	Spent ($)
One-off Grant for STEM		
Grants Balance	$200,000.00	$98,887.00
Grants Expenditure	$101,113.00	$99,016.10 Final deficit = $129.10 (The deficit will be absorbed from the surplus of EOEBG)
3D Modelling	Software and supporting materials	$15,404.00
4D frame workshop and competitions	Workshop, competition and supporting materials	$17,973.10
Micro:bit related activities	Micro:bit packages and competitions	$23,639.00
Hydroponic system	Installing hydroponic system and purchasing supporting materials	$42,000.00

Balance

	2017-2018	**2018-2019**
Balance B/F	--	$98,887.00
Income	$200,000.00	--
Expenditure	$101,113.00	$99,016.10
Surplus	$98,887.00	– $129.10 (The deficit will be absorbed from the surplus of EOEBG)

Success Indicators (e.g. Benefits achieved, Assessment mechanism)

Task Area	Details
3D modelling	To use the new laser cutting technology in making home-made models. • Using the vector graphics design software to design models. • Making models from different kinds of materials. • Designing and producing models to meet specific requirements. <u>Benefits Achieved</u> • Enhance new tools and technology in STEM development. • Streamline the production process of models and parts. <u>Method of Evaluation</u> • Feedback from students and teachers-in-charge of the activity • Evaluate the activities in meetings • Observation by teacher-in-charge and technical support team
Micro:bit related activities --- Rocket Car Competition	Students (mainly from 2A and 2D) formed teams and joined the inter-schools Rocket Car Competition. Participating teams learned about Newton's laws of motion, physics, engineering, streamline shape design, how rockets work and also teamwork in the competition. A related competition for them was organized during the science showbiz day. <u>Benefits Achieved</u> • Arousing their interest in science and technology • Developing problem solving skills through micro:bit related activities • 40 students joined the Rocket Car Competition and the participation was active. • Students are initiated and encouraged to experiment with the car design and try their best to improve the performance of cars. • They learned to use apps and micro:bit for better design of their cars and learned how to work better with their teammates. <u>Method of Evaluation</u> • Feedback from students, teachers-in-charge of the activity • Students' performance in Science Showbiz Day • Evaluation by science teachers • 3 teams of our students got 2nd Prize and 7 teams of our students got Merit Prize in the first round of the Rocket Car Competition in Hong Kong.

Task Area	Details
4D Frame models in Mathematics	To enhance students' understanding in three dimensional spaces and their creativity in problem solving, our school has introduced 4D Frame models to F.1 students. The grant was utilized as follows: • Organizing a workshop to all F.1 students • Supporting students to participate a 4D Frame competition • Purchasing materials for teaching and the external competition <u>Benefits Achieved</u> • Students found the activity interesting and their spatial thinking was shown to be improved. • Positive feedback was received from students and teachers. • Teachers-in-charge agreed that active participation was observed in the workshop. • Students has won the champion and the first runner-up in Hong Kong 4D Frame Maths & Science Creativity Competition organized by The Hong Kong Federation of Youth Groups (HKFYG). They will represent Hong Kong to participate in the international competition in South Korea in October 2019. <u>Method of Evaluation</u> • Students' performance on their work • Feedback from students and Mathematics teachers • Observation by teachers-in-charge of the workshop
Aquaculture (Biology : Biotechnology)	To allow students experience in aquaculture and have hand-on experience in biotechnology The grant was used as: Supply and install nylon mesh, wire, iron pipes to an area around 12 m^2 of an aquaculture site on roof top in school. Supply and install 6 sets of channels and 150 planting holes. Provision of filter systems, water tanks and 6 waterproof electronic sockets and pumped needed. Provision of fertilizers, organic repellent, seedlings throughout the year. Provision of 6 in-class professional teaching sessions of aquaculture each year (1 hr per session). Total 5 years (from November 2018 to August 2022).

	Benefits Achieved a) An aquaculture site was set up on roof top of school. b) A great variety of vegetables and spicy plants were grown (e.g.羅馬生菜, 火箭菜). From November 2018 to March 2019, there were rich harvests of vegetables. F2 and F3 students and the parents enjoyed the harvest. c) In March 2019, we started an investigation on studying the effects of phosphate on the growth of the plants in aquaculture. We purchased some devices to measure the concentration of the phosphate and used some apps. to record the intensity of green colour on leaves as an indicator of healthiness of the plants. Results and reports were summarized. d) The investigation helped to develop the Biotechnology Club. Method of Evaluation • Students' involvement in the activities. • Feedback from students and teachers. • Observation by teachers-in-charge • Results of investigation in Biotechnology could be presented in the School Open Day in Dec 2019.