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Po Leung Kuk Laws Foundation College
Collaborative Projects with Ocean Park and Ocean Park Conservation Foundation
Year: 2020/21

Our school believes it is everyone's responsibility to save marine life and maintain a healthy habitat for all lives in the ocean. A collaboration project is kicked off this year between our school and Ocean Park Conservation Foundation. The core of this project is to raise the public awareness of the conservation ofCetacea in Hong Kong.

Location: Ocean Park – Hong Kong Marine Life Stranding and Education Centre

Date: Nov 2020 – May 2021

Teachers:

Dr Suen Ka Chun

Mr Leung Wing Kin

Mr Lee Chun Hin

Students:

S1 - Yip Kiu Bridget, So Kai Yui Brian, Yu Tsz Ching

S2 – Lui Yan Kiu, Tse Chin Pok

S3 – Yeung Sum Kiu, Law Trinity

S4 – Wong Ching Man

Project 1: Impact of marine plastic wastes on the survival of cetaceans in Hong Kong

Background:

Plastic products are an inevitable part in our everyday life. Its usage covers many aspects such as clothes, food packaging and personal care products. Although plastic is a material with very wide applications, its non-biodegradable nature severely pollutes the environment and

creates irreversible damages to different ecosystems. Terrestrial plastic wastes are washed into the ocean through various runoff, eventually causing adverse impact on marine ecosystem. In the present study, we will investigate the impact of marine plastic wastes on the survival of cetaceans in Hong Kong, particularly Chinese White Dolphins and Finless Proposes.



Project Abstract:

The present research aims to investigate the adverse impact of plastic wastes on the survival of cetaceans in Hong Kong. Data is collected by two means: literature review and on-site experiments.



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Project 2: Gifted Education Programme: From Human Biology to Marine Biology

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Background:

In Hong Kong, there are limited research studies on dolphin's nervous system and its degeneration. Recently, Alzheimer's disease-related pathological characteristics have been found in the brain of two species of dolphins which are *Tursiops truncates* (bottlenose dolphin) and *Stenella coeruleoalba* (striped dolphin) (Davis et al. 2019; Gunn-Moore et al. 2018). It is implicated that the comparative neuropathological and neuropathogenetic study of Alzheimer's disease in humans and dolphins could be a novel research direction for health as well as conservation of dolphins. As marine biology is not common in secondary schools in Hong Kong, development of a gifted education programme about marine biology can promote public awareness on conservation of marine resources. More importantly, scientific research on dolphin's brains may have novel implications on developmental as well as pathological changes in human brains. Therefore, a school-based gifted programme on marine biology with focus on brain development and degeneration in dolphins may nurture potential students to become future scientists and veterinarians.

Our school has set up research-based neuroscience curriculum for scientifically gifted

students since 2005. In this programme, students acquire learning through conducting scientific research on brain science like the research students in universities. Their research topics are mainly related to neurodegeneration and neuroprotection. Our school has also built up close collaboration with **Dr. Raymond Chuen-Chung Chang** , Associate Professor, School of Biomedical Sciences, Li Ka Shing Faculty of Medicine, The University of Hong Kong (HKU). We have collaboratively published many different papers related to scientific research on neurodegenerative diseases and educational research on neuroscience curriculum. In the present project collaborated with Ocean Park and Ocean Park Conservation Foundation, Dr. Chang and his laboratory (**Laboratory of Neurodegenerative Diseases**) will be an important collaborator to provide research training on pathological study on marine animals for our students.

13 November 2020

A briefing was delivered by OPCF on (1) the biology and threats of marine mammals and (2) the role of OPCF in conservation. Students also paid a visit to the Hong Kong Marine Life Stranding and Education Center to understand the facilities and tools used in the rescue and dissection of marine mammals.





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24 November 2020

Students were invited to assist the dissection of a Chinese White Dolphin calf. Students witnessed the procedures of the dissection and helped the OPCF staff members in producing records and prepare tissue samples.





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10 March 2021

Students of the team shared their experience on dolphin research at the kick-off ceremony held at Po Leung Kuk. A few media have reported their experience.

1. HK01 海洋公園與保良局推保育教育計劃 □將安排動物大使到院舍表演

(https://www.hk01.com/社會新聞/597438/海洋公園與保良局推保育教育計劃-將安排動物大使到院舍表演)

2. Sky Post 海洋公園夥保良局合推保育計劃 邀學生體驗工作解剖海豚

(https://skypost.ulifestyle.com.hk/article/2897653/保育教育｜海洋公園夥保良局合推保育計劃%20邀學生體驗工作解剖海豚)

3. Topick 海洋公園與保良局推「快樂保‧旅」計劃□園內動物或到院舍探訪□學生可化身公園職員

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(https://topick.hket.com/article/2897621/【保育教育】海洋公園與保良局推「快樂保·旅」計劃%E3%80%80園內動物或到院舍探訪%E3%80%80學生可化身公園職員)

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9 April 2021

Students joined the dissection of a male finless porpoise stranded in Sai Kung. Students learnt the physiology of this marine mammal species in the waters of eastern Hong Kong. They were also introduced the fundamentals of dolphin skeleton structure.





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