IMPLEMENTATION OF

OPEN-SOURCE RESOURCES FOR TEACHING SYNTHETIC BIOLOGY IN LOW RESOURCE SETTINGS

AT PRAC-SCIENCE LAB

REPORT

Prac-Science Lab

OpenPlant
sharing tools for a sustainable future

KUMASI HIVE

Introduction

Prac-Science Lab and a team of Scientist and Researchers in the UK and in Ghana, with support from the Open Plant Fund came together to work on a project called: *Developing Synthetic Biology Lessons for High School Children in Low Resource Settings.* The team of Scientists had to develop 6 lesson plans on the subject and the duty of the project lead of Prac-Science Lab was to review the lessons to ensure that they were suitable to be taught to high school children in such areas. The lessons were trialed in Ghana with some of the Prac-Science Lab High School children from 18th-29th June, 2018. The lessons were trialed in 2 schools, Ejisu Roman Catholic Junior High School and Weweso Municipal Assembly Junior High School.

The 2 facilitators for the program were Alexis Moscopoulos and Harry Akligoh. Generally, they taught the same lesson concurrently to 2 different sets of children in each school for each session. Each lesson lasted for about 70 minuites and the total number of students reached was 375.

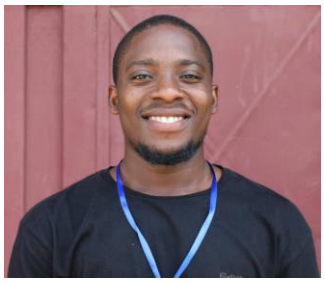
Team

Anna Lowe, Co-founder Kumasi Hive, Makerspace and Innovation Hub in Ghana.

Sabrina Gonzalez-Jorge, Department of Plant sciences, University of Cambridge, Downing Street, Cambridge, CB2 3EA

Hans Pfalzgraf, University of East Anglia

Alexis Moschopoulos, Grobotics, UK



Harry Akligoh, Medical Laboratory Scientist, Ghana.

Aseda Addai-Deseh, Project Lead, Lab 13 (Prac-Science Lab), Ghana

Week 1

Day 1 - Monday, 18th June, 2018.

On the first day, the team went to the Ejisu R/C school. There were 2 groups of children who were taught at the same time by the 2 different facilitators. The children were about 20 per group. The lesson began around 11:25am and lasted for about 75 minutes. The lesson taught on this day was Alexi's lesson on an introduction to genes, traits and the DNA. At the end of the class, the children shared what they learnt and filled an evaluation form on the lesson.

Day 2 - Tuesday, 19th June, 2018.

On this day, the team went to Ejisu R/C school again. The lesson taught on this day was Alexi's second lesson on what Synthetic Biology is and how it can be used to solve problems in the community.

Day 3 - Wednesday, 20th June, 2018.

On this day, the team went to the Weweso School. This school is very large in number and so the team had morning and afternoon sessions with the children. In this school, the 2 groups of children were 25 per group. The lesson taught in the morning between 10am and 11:20am was Alexi's lesson on an introduction to genes, traits and the DNA. In the afternoon at about 12:50pm, the BIngo Traits activity was done with the same group of children that were taught in the morning. At the end of the class, the children shared what they learnt and filled an evaluation form on the lessons taught.

Day 4 - Thursday, 21th June, 2018.

On this day, the team went to the Weweso School again. The lesson taught in the morning was Alexi's second lesson on what Synthetic BIology is and how it can be used to solve problems in the community. In the afternoon, the DNA extraction activity was done with the same group of children. The time schedule for this day was as it was on Wednesday. At the end of the class, the children shared what they learnt and filled an evaluation form on the lessons taught.

Day 5 - Friday, 22nd June, 2018.

On this day, the team was at the Weweso School and the lessons taught were cells and microscopy with the WaterScope and grow your own Microbes. The time schedule for this day was as it was on Wednesday. At the end of the class, the children shared what they learnt and filled an evaluation form on the lessons taught.

Week 2

Day 6 - Monday, 25th June, 2018.

On this day, the team went to the Ejisu R/C school. There were different groups of children on this day who took the practical lessons. The lesson began around 11:25 am and lasted for about 75 minutes. The lesson taught on this day was the DNA Bingo and Alexi's lesson on an introduction to genes and traits. At the end of the class, the children shared what they learnt and filled an evaluation form on the lessons taught.

Day 7 - Tuesday, 26th June, 2018.

On this day, the team went to Ejisu R/C school again. The lesson taught on this day was on microscopy with the WaterScope and DNA extraction. The lessons took place between

12:50pm - 2pm. At the end of the class, the children shared what they learnt and filled an evaluation form on the lessons taught.

Day 8 - Wednesday, 27th June, 2018.

On this day, the team went to the Weweso School. This week, there were different groups of children to be taken through the activities. The lesson taught in the morning was Alexi's lesson on an introduction to genes, traits bingo and the DNA along with DNA extraction. In the afternoon, the Bingo Traits lesson was taught to the same group of children that were taught in the morning. The lessons took place between 12:50pm - 2pm. At the end of the class, the children shared what they learnt and filled an evaluation form on the lessons taught.

Day 9 - Thursday, 28th June, 2018.

On this day, the team was supposed to meet with the children from Weweso School but there was no meeting with the children as they were engaged with their school lessons.

Day 10 - Friday, 29nd June, 2018.

On this day, the team was at the Weweso School and the lesson taught on this day was an introduction to cells and DNA extraction. At the end of the class, the children shared what they learnt and filled an evaluation form on the lessons taught.

Materials & Instruments for Prac-Science

At the end of the program, Prac-Science Lab received 200 Foldscopes, 3 WaterScope and GHS 301.33 to support it in its operations.

Gallery













WEWESO JHS PTA

WEWESO JHS PTA


WEWESO JHS PTA









WEWESO JHS PTA









WEWESO


WEWESO 49JS


JHS PTA

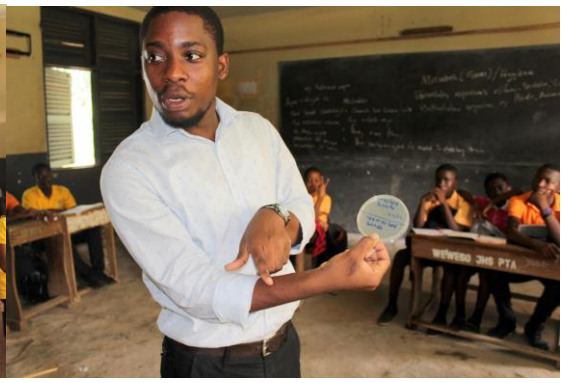


WEWESU JHS PTA






WEWESO JHS PTA



WEWESO JHS PTA









Thank You.