

Science Week
Nachingwea secondary schools, Tanzania

Isobel Hambleton - Recipient of an outreach grant from the Biochemical society and a PhD student at the University of Cambridge.

In August 2018 I travelled with two English teachers from Stapleford, Cambridgeshire, to Nachingwea, Tanzania. The aim of our trip was to continue the work of the Stapleford-Nachingwea Link project, which has been supporting the Nachingwea community for over thirty years. The main focus of the work this year was to deliver hands-on science and English lessons to pupils at Nachingwea Secondary School and Nambambo Girls' School. An outreach grant from the Biochemical Society provided funds for science teaching materials, equipment for practical classes, visual teaching aids and stationery. These resources, which were deliberately chosen to be re-usable and durable, were used to teach our lessons and then donated to the schools in Nachingwea; this means that the teachers can re-use them with other classes and incorporate them into future lessons.

Each afternoon the sessions started with an English lesson, giving an introduction to the science vocabulary required for the relevant topic. This was followed by an interactive explanation of the scientific background, using visual images and models. The visual and practical components of the lessons ensured that pupils who were less confident in their English skills could still participate in all aspects of the lessons. Topics covered ranged from the components and functions of blood, infectious disease (including sanitation, hygiene and vector transmission), to an introduction to the solar system.

Throughout the sessions the pupils at both schools were engaged and motivated. Class sizes were very large (50+ students) and the space was extremely limited. However, the pupils were really keen to

learn and were very respectful of each other, making it possible for everyone to contribute to group discussions and activities.



Learning about the biology of malaria as an example of a vector-borne disease.



Making plasticine models of the malaria pathogen, *Plasmodium falciparum*.



Model of blood cells.

For the solar system topic, large inflatable planets were used. Pupils participated in a team game which involved an investigation to find the biggest, hottest, coldest, nearest planet etc. This exercise required the pupils to pick out the important numerical details from tables and graphs, practising skills that had been used earlier in the week.



Inflating the giant solar system model.



The teachers trying out a solar system board game.

Some of the lesson plans had to be adapted to suit the facilities in the schools. For example, a UV light hand washing kit was purchased to complement the infectious disease teaching. This kit involves putting a small amount of UV hand gel on a volunteer's hands. The volunteer then washes their hands with soap and water. A small UV torch is used to visualise the areas of the hands that have not been washed sufficiently. However, on arrival to Nachingwea I discovered that access to soap is limited and unaffordable for most people. Without soap the UV hand washing kit would not deliver the intended learning objective. The kit was instead donated to a nearby nursing college where it can be used more effectively.

At the end of the teaching we asked the students to reflect on the science lessons and to share why they thought it was useful to learn about the topics we had covered. Here are some of their responses:

"I like learning about science because I like to know how things in the world work"

"My favourite thing was looking at the blood cells"

"I liked to learn science because in the future I want to be a teacher and teach chemistry to the pupils"

"I want to learn science and other classes because I want to control my life"



Teachers and students at Nachingwea Secondary School.

All of the teachers and pupils involved in this project are very grateful for the support provided by the Biochemical Society.

Asante sana!