

## World Science Movement Microgrant

STEM Programs in Uganda with Twin Science



Various students participating in the North Green School participating in the after school robotics program organised by Uganda Flying Labs

OVERVIEW	
<b>Flying Labs</b>	Uganda Flying Labs
<b>Location</b>	Kampala, Uganda
<b>Date</b>	10th February - 17th June, 2022
<b>Length</b>	12 weeks
<b>Sector program (optional)</b>	YouthRobotics
<b>Format</b>	In-Person
<b>Co-organizer if applicable</b>	The North Green Schools

<b>SDGs</b>	<a href="#">GOAL 4: Quality Education</a> <a href="#">GOAL 10: Reduced Inequality</a>
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<b>SCOPE &amp; OUTCOMES</b>	
<b>Type of training</b>	1. Youth/STEM training
<b>Goal of the training</b>	1. Utilize the kits for raising awareness in STEM fields, social good, and career opportunities 2. Promote creativity and innovation among the youth 3. Train and empower youth and the workforce of the future.
<b>Expected outcome for participants</b>	<p>The participants were expected to familiarize themselves with the kits and its possibilities and then come up with different science experiments that they can conduct to solve everyday problems.</p> <p>They were expected to brainstorm, innovate and improve the technologies that they come across in their daily lives to solve problems in their communities with the help of the kits.</p>
<b>Confirmed outcome after training</b>	<ul style="list-style-type: none"> <li>● The students were able to carry out a total of 12 STEM pre-planned Experiments including coding experiments plus more of their choices. They were able to complete all the hands-on experiment. Some of the experiments they were able to do by themselves following steps using the Twin coding up with minimum supervision. Also, they were each able to creatively think and try out all the possible improvements to the technologies they were being exposed to by the twin coding app.</li> <li>● The students managed to use the kits and their creativity to come up with interesting project ideas. They were able to do this by combining relevant modules from the lessons and come up with a working improvement to the technology of their choice.</li> <li>● The students also showed an improvement in problem solving skills as they were able to quickly identify, evaluate and fix bugs and issues that came up during the project.</li> </ul>

<b>Eventual next steps</b>	<p>The participants will be working on projects of their choice geared at solving a problem around them. Especially around their school since it's the only place where they can find the kits. They are to think creatively and innovatively about this and they are to use the available materials. That is the Twin kits and any other external materials that can be used alongside the kits. They are to present their projects to their school and their parents.</p> <p>The only challenge is that the program is soon ending and the children have very limited access to the kits since they are not a property of the school and they are few in number compared to the number of learners. We will be working closely with Twin Science to see how we can solve this issue</p>
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<b>PARTICIPANTS</b>	
<b>Profiles and the number of participants</b>	1. School children - 11 participants
<b>Name of participants' organizations</b>	The North Green Schools
<b>Gender ratio</b>	Girls: Boys 55% : 45%
<b>Who paid for the training?</b>	Paid by the individual participants through the organisation/school
<b>Participant fee rate (if applicable)</b>	200,000 UGX or \$55 USD
<b>Scholarships offered?</b>	NONE

<b>CONTENT</b>	
<b>Training components</b>	<ul style="list-style-type: none"> <li>● Science Experiments</li> <li>● Twin app</li> <li>● Coding</li> </ul>

<p><b>Training resources used</b></p>	<ul style="list-style-type: none"> <li>● Twin Robotic kits</li> <li>● Tablets</li> <li>● Mobile phones</li> <li>● Desktop computers.</li> <li>● Twin coding app.</li> <li>● Youtube</li> </ul>
<p><b>Approaches and methods used</b></p>	<ul style="list-style-type: none"> <li>● Instead of a classroom setting, we opted for a more fun way to do the project, so we did it as a STEM AND ROBOTICS club that happened after normal school classes. The club idea is different from the class idea in the minds of young learners. We were intentional about this such that although it happened in a classroom space, it did not feel so. The word robotics caught the attention of learners since it's like one of the most interesting parts of science that thrills students at this stage of learning.</li> <li>● The training was completely hands-on. We had 3 learners team up to use a kit. These teams were almost unchanged throughout the project. I demonstrated an experiment and gave them the chance to perform the experiment for themselves after my demonstration. Every learner had equal chance and exposure to the kits and was able to use it to suit their personal interest as well because the kits offer lots of possible experiments.</li> <li>● Every learner had an opportunity to try out and come up with experiments of their choice based on theoretical knowledge they had received from their normal science class and from the introductions I gave them about the different experiments at the beginning of every session. For example, They had to think of the possible improvements to the different technologies that they were exposed to in the experiments we carried out. And they had to apply it using the different twin modules in the kits.</li> </ul>