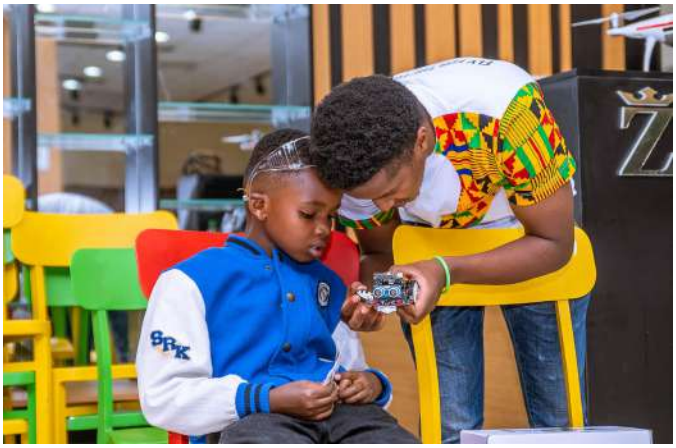
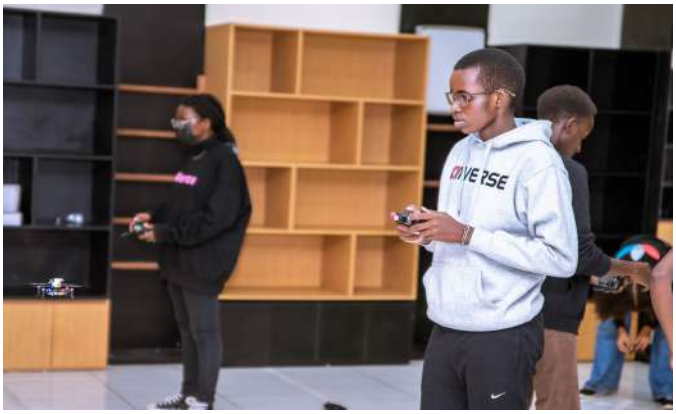
Youth Robotics Camp



Student Assembling A Mobile Robot With An Instructor



Future Drone Pilot Testing The DIY Drone

OVERVIEW	
Flying Labs	Kenya Flying Labs
Location	Nairobi, Kenya
Date	4th April - 8th April, 2022
Length (number of days)	5 days
Sector program (optional)	YouthRobotics
Format	In-Person
SDGs	GOAL 4: Quality Education

SCOPE & OUTCOMES	
Type of training	1. Introduction training to drones 2. Youth/STEM training 3. Introduction to Robotics using Shy Robots
Goal of the training	1. Create drone and robotics awareness on its various applications in the real world 2. Train and empower youth and the workforce of the future 3. Empower youth to explore different options in drone and robotics in general (raising awareness)
Expected outcome for participants	Participants attended the training with expectations of understanding how drones work and what applications are presently working and being tested in the real world. They also expected to explore the different opportunities for career pathways in robotics and STEM in general
Confirmed outcome after training	Through this camp, participants were able to practice manual drone flights in groups which helped with their confidence as well as their team work skills. They also were able to achieve basic understanding and knowledge of what drones are and how they work. This was tested through a short quiz after the camp concluded which showed promising results. In addition to this, one participant from a Kenyan high school was really impressed by the camp and has now formally engaged Kenya Flying Labs to prepare for a school project and competition called the Science Congress.
Eventual next steps	An estimated 10 (not confirmed yet) students are interested in wanting to gradually progress through the Kenya Flying Labs STEM program from Beginner to Intermediate and then Advanced level. The Kenya Flying Labs team will be working on conducting these training sessions next. Interest from teachers and schools have been gradually increasing as well for school Drone Clubs. In the upcoming months, Kenya Flying Labs will be gradually meeting with schools and understanding their needs for setting up Drone Clubs.

PARTICIPANTS	
Profiles and number of participants	1. Parents and guardians of the participants - 15 2. Intern (university student) a. Aeronautical engineering student 3. 10 participants - ages 6 - 17 years old
Name of participants' organizations	1. Riara Springs Academy 2. Nairobi School 3. Consolata Academy 4. Peponi School 5. Cavina School 6. St. Georges Academy 7. Nyeri High School 8. Limuru Girls High School 9. Jabali Christian School 10. Shadel Montessori Center
Gender ratio	2 Girls : 8 Boys
Who paid for the training?	Parents and Guardians
Participant fee rate (if applicable)	$30 - $80 USD

CONTENT	
Training components	Introduction to Drones (Remokings) ● Introduction to drones ● Understanding the Remoking kits ● Safety and Pre flight checklist ● Manual flights ● LiteBee - for coded flights Robotics (Shy Robots) ● Introduction to Robotics and applications ● Understanding the kits ● Tinkering This program was broken down and carried out for a total of 3 - 4 hours daily for 5 days. More time was dedicated to hands on activities to allow participants to become familiar with

	what they were working with.

Training resources used	• Software
	  ○ LiteBees App - LiteBee drone
	  ○ Microbits - Shy Robots
	• Hardware
	  ○ LiteBee drones
	  ○ Shy Robot kits - laptop for the app
	  ○ Remokings + controller
	  ○ DJI Phantom 4 - for explaining theoretical concepts
	• STEM Brochure
	• Poster

Approaches and methods used	• Since there were participants from different age categories, we (Kenya Flying Labs) asked the participants questions related to the material before explaining the concepts to them. This way we could see what the participants already knew and built on their knowledge. • The manuals for the Remokings were projected on the projector to allow the participants to assemble the kits themselves (with supervision). This was done to allow participants more time with the kits so that they can familiarize themselves while being patient (seeing the kits as tools and not toys). • Hands on training - used the kits to first explain to the participants what each part of a drone is and what it does before assembly. This helped participants understand the importance of following instructions as well as knowing the function of different parts of a drone