

Project Dare to Fly



Figure 1: Learners working together on wiring and assembling various robotics components, including a truck



Figure 2: Learners learning about basic drone movements and how to safely operate them.

OVERVIEW	
Flying Labs	Flying Labs Namibia
Location	Windhoek, Namibia
Date	22nd January - 8th October 2021
Length (number of days)	4 months (multiple interruptions because of the global pandemic)
Sector program (optional)	YouthRobotics
Format	In-Person
Co-organizer if applicable Name of the co-organizer organization if relevant	Coordinated with two schools <ul style="list-style-type: none"> ● Academia Secondary School ● Rosewood Academy
SDGs	GOAL 4: Quality Education GOAL 5: Gender Equality

SCOPE & OUTCOMES	
Type of training	<ol style="list-style-type: none"> 1. Introduction training to drones 2. Youth/STEM training
Goal of the training	<ol style="list-style-type: none"> 1. Create drone awareness <ol style="list-style-type: none"> a. discussed at an introductory level b. Project - students came up with the idea to apply the knowledge that they gained from their Instructors (conceptualization, pre-planning, etc) 2. Train and empower youth and the workforce of the future
Expected outcome for participants	<p>Basic understanding and introduction of physics, meteorology, geography, improvement in participants grades in schools, knowledge of basic drones regulations and operations in Namibia.</p> <p>One of the schools had a Robotics class (as a subject) so we were able to teach through this available resource</p>

Confirmed outcome after training	<ul style="list-style-type: none"> ● Improvement in the participant’s Robotics class (grade-wise) ● Hands-on practical classes which actually made a difference for students Physics classes - after school program ● A better understanding of Trigonometric functions for math classes with the use of mini-drones in the gymnasium ● Structured curriculum tweaked throughout the program which will be used for future programs and applications
Eventual next steps	<ul style="list-style-type: none"> ● Online component - to make the program accessible to more learners. ● Capacity Building - through online training for Teachers so that the program can become self-sustainable. ● Interns - getting more hands on deck to make the program efficient. ● Curriculum Improvements. ● Maths - introduce practical methods to help students learn and understand. ● Accreditation - looking forward to getting the program certified (Namibia Qualifications Authority)

PARTICIPANTS	
Profiles and number of participants	<ol style="list-style-type: none"> 1. Staff from the two schools <ol style="list-style-type: none"> a. 30 Instructors/Teachers 2. School children <ol style="list-style-type: none"> a. 12 students
Name of participants’ organizations	<ul style="list-style-type: none"> ● Academia Secondary School ● Rosewood Academy
Gender ratio	Girls: Boys 1:4
Who paid for the training?	<ul style="list-style-type: none"> ● USA Embassy - Namibia ● Kanie SDC ● Students - administration fee
Participant fee rate (if applicable)	250 Namibian Dollars / Month (subsidized)

Scholarships offered?	Yes, Partial scholarships on behalf of FL Namibia
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CONTENT	
Training components	<ul style="list-style-type: none"> ● Introduction to drones ● Basics of <ul style="list-style-type: none"> ○ Meteorology ○ Physics and Maths ○ Robotics, Computer Science (software & hardware) ● Basics of drone operations in Namibia
Training resources used	<ul style="list-style-type: none"> ● Tello drones (Tello EDU) ● Rokit Smart by Robolink ● Lenovo M7 tablets
Approaches and methods used	<ul style="list-style-type: none"> ● How did you adapt the training to your specific audience? <ul style="list-style-type: none"> ○ Slowing the pace of the program considerably to adapt to the learners ○ Revising the basics of the program as students were unaware of certain aspects which we assume they knew ○ Students with disabilities: <ul style="list-style-type: none"> ■ pedagogy was refined to meet the needs of students who had a hard time grasping concepts ■ The theory was shortened and practical was given more priority as students lost interest and attention very quickly ● Were there opportunities for participants to put theoretical knowledge into practice? If yes, what were these opportunities? <ul style="list-style-type: none"> ○ Yes, students got to put to practice what they learned through the Tello drones and Rokit Smart robot. They were given real-life scenarios and asked to come up with applications.