# Robotics Training for Youth at Garankuwa YMCA



Learners using the online training platform



Learner loading robot with software

| OVERVIEW | |
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| **Flying Labs** | South Africa |
| **Location** | Pretoria South Africa |
| **Date** | 05 June 2021 |
| **Length (number of days)** | 1 Day |
| **Sector program (optional)** | YouthRobotics |
| **Format** | In-Person |
| **Co-organizer if applicable** | FundaBotix and YMCA |
| **SDGs** | GOAL 1: No Poverty<br>GOAL 4: Quality Education<br>GOAL 10: Reduced Inequality |

## SCOPE & OUTCOMES

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| **Type of training** | 1. Youth/STEM training |
| **Goal of the training** | 1. Train and empower youth and the workforce of the future |
| **Expected outcome for participants** | Introducing youth to robotics and programming of robots |
| **Confirmed outcome after training** | The participants gained the following knowledge and skills:<br>1. Basic understanding of what a robot is<br>2. Developing their interest in robotics<br>3. Basic robot programing skills to perform certain functions<br>4. Various career options in robotics |
| **Eventual next steps** | 1. Organise a 3-5 day course for coding of robots for those youth who have interest in robotics<br>2. Source funding to do broaden and massify the reach of the course to outlying and rural communities and youth<br>3. Buy robotics kits to allow the youth to play around(code) with their robots in their own homes |

## PARTICIPANTS

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| **Profiles and number of participants** | ● 3 Local community members(observers)<br>● 11 School children |
| **Name of participants' organizations** | Young Men's Christian Association (YMCA) |
| **Gender ratio** | 45% Female, 55% Male |
| **Who paid for the training?** | Free training |
| **Scholarships offered?** | Full |

| CONTENT | |
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| **Training components** | The learning material used in the workshop covered the following topics:<br>● **Introduction to Programming**<br>In this course, the learners were introduced to programming and some of its real-world applications. They also learnt several programming concepts and built their first computer program.<br>● **Introduction to Robotics**<br>In this course, the learners were briefly introduced to the field of robotics, its applications and the various components that make up a robot. The learners also learnt how to program a robot to perform basic tasks. |
| **Training resources used** | ● **Computers** with the following specs:<br>  ○ Windows operating system<br>  ○ internet connection<br>● **FundaBotix Robotics kits** with the following features:<br>  ○ Line following module<br>  ○ Obstacle avoidance module<br>  ○ Light following module<br>  ○ Motion control (Speed, time and direction)<br>  ○ Button input<br>  ○ Sound output<br>● **FundaBotix Robotic Coding Software** - a software application that allows the learners to program the robot.<br>● **FundaBotix Online Learning Academy** - an online-based learning platform that allows learners to access the learning content and perform learning activities. |
| **Approaches and methods used** | ● Had qualifying criteria which was used for selection and qualifying candidates were appointed<br>Our criteria included age- 13-18, the learners must have used a computer before.<br>We wanted to ensure as this was a one day workshop the pace isn't affected by people who don't know the basics of using a computer.<br>● We included robots programming exercises and allowed the participants to perform specific actions using a PC |