

**Innovation
FIRST**

**STEM
EDUCATION
FOR MORE STEM
JOBS IN AFRICA**

**FROM ELEMENTARY
TO UNIVERSITY**

**Get Your
TEAM
REGISTERED**

Bole TK BLDG 1st Floor No. 110
Blorata Gabreal, Int Tennis club, 3rd Floor
Bole Reality Real estate 12th Floor

AFRICAN ROBOTICS CHAMPIONSHIP 2024/25

Jan
23-25/2025
ADDIS ABABA, ETHIOPIA



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Ethio Robo Robotics Ethio Robo Robotics Official Ethio Robo Robotics

Welcome

Ladies and gentlemen, distinguished guests, participants and fellow engineers,

I am delighted to welcome all of you to today's the African Robotics Championship. On behalf of Ethio Robo Robotics, it is with great excitement that we kick off a truly remarkable event.

African Robotics Championship is designed to broaden your designing, engineering, programming and teamwork skills. The purpose of this educational event is to provide an exceptional and enriching experience on Science, Technology, Engineering & Mathematics (STEM), where you will have the opportunity to engage interactively, with hands on STEM activities and as a robotics competitor.

As Student, you are the driving force behind this event. Your passion, dedication, and commitment to robotics have brought you here today. This competition will not only enhance your knowledge but also provide you with valuable skills that will serve you well in your future endeavors.



Our team of dedicated professional educators and organizers have worked tirelessly to create an Educational STEM environment that fosters STEM-learning, and healthy competition. Throughout this championship, you will have the opportunity to showcase your talents, test your abilities, and strive for excellence.

I encourage all of you to tackle this tournament with commitment and a competitive attitude. Allow the problems you experience to fuel your motivation and determination to succeed. Accept the pressure, learn from each experience, and remember that every challenge is an opportunity for progress.

We welcome all African students to arrive with an open mind, eager to participate in this valuable educational event and take advantage of this amazing opportunity. Finally, Addis Ababa will be a great location, and I hope you all take the time to explore it.

Once again, welcome to the African Robotics Championship. May these three days be filled with excitement, discovery, and the boundless possibilities that robotics offers. Together, let us shape the future of Africa and the world.

As we start on this thrilling journey of competition, innovation, and friendship, I wish each and every one of you the best of luck. May your hard work pay off, may your creations shine, and may this African Robotics Championship be an unforgettable experience that propels you towards a future filled with success.

*Welcome to A+STEM
Future*

Senakriem Mekonnen
Managing Director

A handwritten signature in black ink, appearing to be 'Senakriem Mekonnen'.



Ladies and gentlemen, esteemed participants,
On behalf of the Ministry of Innovation and Technology (MINT), I warmly welcome and Congratulate you all African teams participating in the 2025 African Robotics Championship.

Today, we are really proud and honored to be here as we recognize the hard-work, commitment, and creativity shown by the competing teams. You have clearly invested countless hours in designing, Building and programming robots that demonstrate your skills, by exploring the applications of STEM while increasing your communication and teamwork skills along the way.

On behalf of Ministry of Innovation and Technology, I want to express our sincere appreciation to the school leaders, parents, and our community members who have inspired our students to embrace the world of STEM through robotics competitions. Your unwavering support has been instrumental in nurturing the passion and potential of these young individuals. This is a journey to learning deep skills of digitalization through robotics programming.

The importance of encouraging an innovative and experimental culture in our educational institutions is powerfully demonstrated by this championship.

In an era where technology continues to reshape industries and societies, it is imperative that we nurture and empower the next generation of problem solvers. The African Robotics Championship stands as a beacon of hope, illuminating the path towards a future driven by science, technology, engineering, and mathematics.

I am delighted to welcome you all the participating teams to the annual African robotics championship and I would like to say good luck for your remarkable efforts and skills.

Finally, on behalf of Ministry of Innovation and Technology, we stand with you and encourage you to showcase your problem-solving skills, challenge boundaries, and inspire others with your innovative solutions. Use this opportunity to demonstrate your abilities and leave a permanent mark on the field of Robotics.



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In collaboration with
Ministry of Innovation and Technology

Dr. Belete Molla
Minister
Innovation & Technology Minister

About Us

Ethio-Robo Robotics Education and Competition Center was founded in 2011. The institute is a unique platform aimed at promoting and strengthening the development of analytical thinking and problem solving skills in the field of science, technology, engineering and math through hands-on Robotics education and competitions.

Vision

To provide our students with the practical application of STEM, this will help the students participate in science, technology, engineering and math by providing educational robot kits to practice what they are taught in their theoretical classes through continuous practice and competitions.

Mission

- Helping students come together and get involved in STEM related Robotics education and competitions in Ethiopia by providing them with the necessary Robotics equipment at an affordable price
- Establishing a stronger foundation on STEM education and strengthen STEM education in Ethiopia and Africa
- Help students think out of the box, improve their logical thinking, cultivate, inspire, develop, innovative abilities and creative thinking
- Enrich experience, engage on project-based learning and improve problem solving skills intellectually by stimulating mental activities.

Q1

Is Africa Robotics Championship being organized for the first time? Which institution is organizing it?

- No, it will be organized for the third time
- It will be organized by Ethio-Robo Robotics education and competition center in collaboration with the Ministry of Innovation and Technology.



Q2

What are the dates and places of the Africa Robotics Championship?

It will be held on January 23-25, 2025 at the Millennium Hall in Addis Ababa, Ethiopia.



Q3

Can students who are new to Robotics participate in the Africa Robotics Championship? And how can we get a robot kit for the competition?

- Yes they can, we will give you all the instructions on how to start Robotics training to help you organize your team and prepare them for the Africa Robotics championship.

- We can assist you to get the robot kits.
Email:-ethiorobo@gmail.com/senakreim@gmail.com
Phone:-+251911675401/+251909790386
Telegram:- Ethio Robo Robotics
Facebook:- Ethio Robo Robotics
Web:- ethioroborobotics.com



Q4

If we organize our team here in Addis Ababa and don't have a place to practice where can we practice and take trainings?

If the team lives in Addis Ababa and have no other place to gather, they can come and practice at Ethio-Robo Robotics for free. But they should make time arrangement first with our office to use the center.

(Africa Road Bole TK Bldg office no.110)
Phone:-+251911675401/+251909790386
Email:-ethiorobo@gmail.com/senakreim@gmail.com
Website:-www.ethioroborobotics.com



Q5

Who is the target audience of the Africa Robotics Championship? Who is able to join?

Students, teachers, and mentors are the main target demographic for the Africa Robotic Champion.
All students from Grades 1 to College and University can join.
Level 1: Includes Grades 1-6 (Elementary & Middle school)
Level 2: Includes Grades 9-12 (Secondary & High school)
Level 3: (College and University)



Q6

What is the purpose, philosophy and concept of the Africa Robotics Championship?

The Africa Robotics Championship is planned for students who are interested in Science, Technology, Engineering, and Math. The purpose of African Robotics Championship is to improve student's skill on STEM, programming, designing and engineering through Robotics. The Africa Robotics Championship is open to all students who are interested in innovation, not just those who are academically talented or successful. You are welcome to participate in the competition that is set up for you and your team in order to let students see, catch, and experience STEM through Robotics.

Heads & Hands on



Science • Technology • Engineering • Math



Q7

Does the Africa Robotics Championship (ARC) have a country pre-qualification (national final)?

No, there is no country qualification (national final). Students from whatever they live can form their own team and join the African Robotics Championship in Addis Ababa, Ethiopia directly.



Q8

What is the competition method in the Africa Robotics Championship? Is this a project-based competition?

Yes, this robotics competition is a project-based one. It is not a rigorous paper-based written test with challenging questions. It includes designing, coding, and engineering activities where you can engage and get hands-on experience in a fun, STEM-based learning environment. You will also be able to understand how STEM knowledge is actually applied.



Q9

Can one person compete in the Africa Robotics Championship?

At ARC, one person cannot participate alone; instead, teams of at least six students must enter the competition. More than six students working under the direction of a teacher or coach to constitute a group or team. Since this is a group activity and a group competition, each team should build a robot collaboratively in order to complete the tasks set out in the competition. All students in the group must participate in the robot-building process.



Q10

Can we use any other robots to compete? What does the competition look like?

- No, You can't use other robots, students can only compete using a VEX robot.
- All participants must design and program their robot to function a specific task given for the year. They should follow all the rules and the instructions given on the game manuals and booklets.

- The competition is based on designing, engineering, and programming skills. You should build, design, and program your robot to do the required task in your own way and win an award for programming, designing and engineering skills.

- All participants are required to bring the robots they developed. There won't be enough time to construct the robot right away. Robots must be delivered completed and prepared for inspection. Robot inspection and practice day will take place on the first day of the event.

- All teams competition schedules will be given on the first day of the event.

- In the Africa Robotics championship teams of students are tasked with designing and building a robot to play against other teams in a game-based engineering challenge. Class room STEM concepts are put to the test as students learn lifelong skills of team work skills, leadership, communication and more.



African Robotics Championship 2024



Q11

What are the competition guide booklets/ game manuals? Are there any separate booklets or game manuals for each level?

There is a separate game manual and booklet for each level. All levels in the same group will have identical game manuals and booklets. You can find the game manuals or booklets on the website listed below.

website: www.vexrobotics.com

1. VEX IQ challenge, game manual
2. VRC high school and VEX U teams university and college level, game manual.

The instructions and regulations for the engineering and programming skills competition should be followed.



Q12

What is language of the organization and the competition guide booklets & game manuals?

English serves as the competition's official language of correspondence and administration. However, we will offer a translator for any team participating in this event who is not able to speak English.



Q13

How many rounds will there be and where will they take place?

There will be 3 rounds in total.

1. Round matches
2. Qualifying matches
3. Final matches

All rounds will take place at the Millennium Hall, Addis Ababa, Ethiopia



Q14

How are levels determined?

Organize your team in order based on the respective levels. There are three levels: elementary and middle school teams, high school teams, and college and university teams. Teams must contain a minimum of six students from each level, regardless of their grade.

Level 1: includes grade 1-8 (Elementary and Middle school)

Level 2: including grade 9-12 (Secondary and high school)

Level 3: college and university up to age 21

All teams must have an adult mentor, teachers, team leader or coach.

Q15

Is there a deadline for the registration?
Is there a participation limit?

The registration deadline is until December 31, 2024. The capacity for applicants for the year 2024/25 is more than 50 teams; one team can have 8 to 25 students, 800 hundred students are expected to participate in this event, one country can have more than one team there is no limit on the number of the participants.



Q16

Is there registration fee?

Does the registration fee include services?

Yes, for students who live in Addis Ababa the registration fee for elementary and middle school is 300.00 USD and for the high school and college students is 300.00 USD. The registration fee does not include any other service.

but for students who are coming from outside of Ethiopia the registration fee will be 450 USD; this fee includes transportation after landing at the airport in Addis Ababa, Ethiopia, hotel, breakfast, lunch, dinner service.

You can pay through the commercial bank of Ethiopia's swift payment service.

Swift code:- CBETETAA1000479121684



Q17

Are flight tickets included in the price? How will it be arranged?

The flight ticket is not included in the price you must track and organize these services with the coach or team leader yourself. Our service begins on arrival at Bole International airport, Addis Ababa, Ethiopia.



Q18

How will the visa be issued?

Visa is on arrival but if you would like to ask the Ethiopian embassy in your country and make sure about the visa process, we would send an invitation letter and any supporting document necessary. You can check the website to apply for a visa (www.evisa.gov.et)



Q19

Will somebody welcome us at the airport or will we go to the hotels by ourselves?

The ARC team staff will provide transfers to hotels from early in the morning until late at night for all participants on January 22, 2025. If you are arriving on different days or at a different time before the event, please send us your airline ticket details.



Q20

Where and how will breakfast, lunch and Dinner be provided for participants?

For students who will come from outside of Ethiopia breakfast, lunch and dinner will be served in a hotel selected by the organizer. All groups will have their meals at one hotel periodically according to the scheduled time.

For all Ethiopian students who will come from outside of Addis Ababa they will stay in a hotel selected by the organizer and cover their own expenses. And lunch will be provided at the venue to all participants, but they should buy their own lunch.



Q21

How will daily transfers, going to the competition and returning to hotels, take place for Foreigner students?

The competition will be held at Addis Ababa Millennium hall so we have teams staying in other hotels. For students who come from outside of Ethiopia bus services will be provided according to the number of groups. All transfers will be arranged and provided for groups for three days.



Q22

Any information about the award ceremony, competition results and medals?

The competition site will host the award ceremony. At the Africa Robotic Championship, each competitor will be awarded a medal and a certificate of participation in addition to that medals and certificate of excellence will be presented according to their rank by the Ethiopian government "Ministry of innovation and technology"



Q23

Is African Robotics Championship open for everyone?
Can teams of students who are not African participate on Africa Robotics Championship?

Yes they can. This competition is organized in Addis Ababa, Ethiopia but its open for all students from around the world who would like to show their innovation skills.



Q24

Will there be any change on the time, schedule and place?
If there is, how will you let us know?

- ✓ There won't be any changes at this time, but we'll let you know on our website if something gets out of hand.
website: www.ethiorobotics.net & in all our social media platforms
- ✓ Like our pages on
 - Facebook: [Ethio Robo Robotics](#)
 - Telegram: [Ethio Robo Robotics official](#)
 - Tiktok: [EthioRoboRobotics](#)



Q25

Who are the judges?

Judges are well trained and appointed by Ethio Robo-Robotics and ministry of innovation and technology. They are impartial and shall strive to properly judge at the effort of the teams. Most importantly the competition result will be displayed in big screen via "VEX tournament manager software" so everyone can see the result.

Judges have different responsibilities

- Robot Inspection.
- Review the team's engineering note books.
- Controlling time during the competition.
- Announcing results.
- Announcing award winning teams.
- Give points based on the robot performance.
- Giving different types of awards based on their rank.
- Interview the teams: teams need to explain about how they worked together during the Robot designing and engineering process and their time management, what their team work looks like, and also give ranks if they see an award winning design.



Q26

Can talented but economically disadvantaged students participate in the ARC?

Yes they can, but they will have to find sponsors to buy them a robot and pay any related costs.





What is STEM?

- a) **Science**
- b) **Technology**
- c) **Engineering**
- d) **Mathematics**
- e) ~~All of the above~~

ROBOTICS

Q27

Will there be an international competition for winners of the African Robotics Championship?

Yes, the winning team will go to the USA, Canada, Australia, Europe or China for the international Robotics competition (world championship).



Q28

Do students have to wear a uniform?

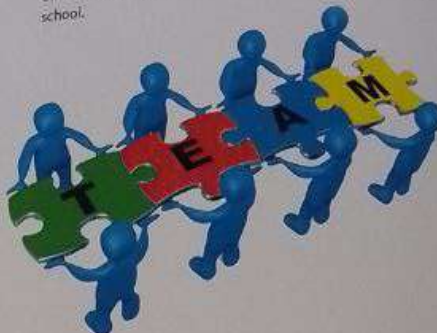
Yes, all students must wear a uniform provided by the organizer.



Q29

Can one school have more than one team?

Yes, it's possible for a school to have more than one team. Depending on the amount of students that are willing to join from that particular school.



Q30

How can we get registered to participate on African Robotics Championship?

You can get registered online at www.vexrobotics.com or you can come to Ethio-Robo Robotics for any kind of help.

It will be our pleasure to help you with the Registration process.

Telegram:- Ethio Robo Robotics official

Facebook:- Ethio Robo Robotics

Email:- ethiorobo@gmail.com

WhatsApp:- +251 909 790386

Phone No:- +251 911 675401

Address:- Bole Africa Road, TK BLDG 1st floor Off.No 110



Q31

If we have any question how can we reach the organizers?

If you have any questions connect with us on...

Telegram:- Ethio Robo Robotics official

Facebook:- Ethio Robo Robotics

Email:- Ethiorobo@gmail.com

Phone no:- +251911675401

+251909790386

Address:- Bole Africa Road, TK BLDG 1st floor Off.No 110



is your design the next?



• Stone wheels were the first wheels used in Mesopotamia and is believed to be over fifty five hundred years old.



• Since stone was very heavy, it was replaced by wooden disks with a hole for the axle.



• With the evolution of spokes, wheels become lighter. Spokes helped the wheel in retaining its shape.



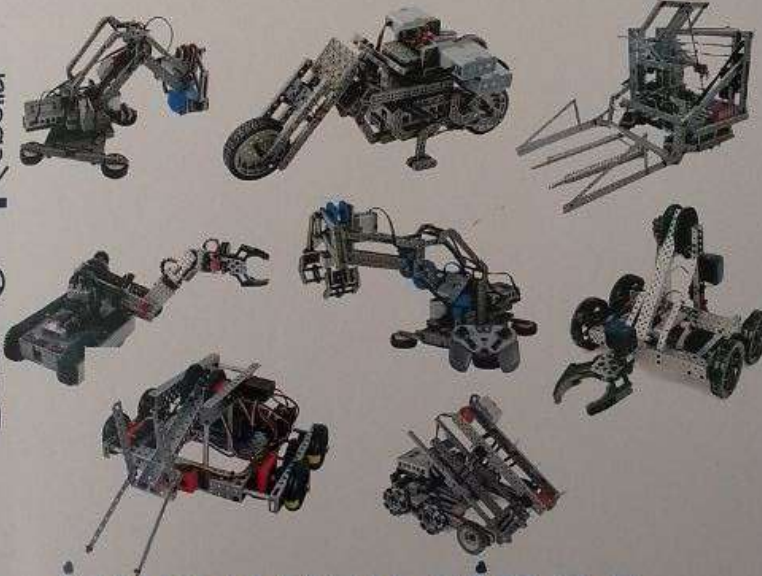
• With time humans realized that if an air-filled rubber tube was covered around the tire, the shocks due to bad roads were considerably reduced.



• With introduction of tubes also came the problem of having flat tires. Tubeless tire was introduced to overcome this problem.

Design and Redesign

Build & Rebuild



INNOVATION FIRST

Q32

How about attractions /entertainment?
Are there extra payments?

Yes, there are payments regarding different entertainments, all participants can visit different places like, national museum, science museum, friendship square, unity park, Entoto park etc. Interested participants cover their own entrance fee.



Q33

If we want to have a trip after the Robotics Competition to other places, in Ethiopia, are there any suggestions?

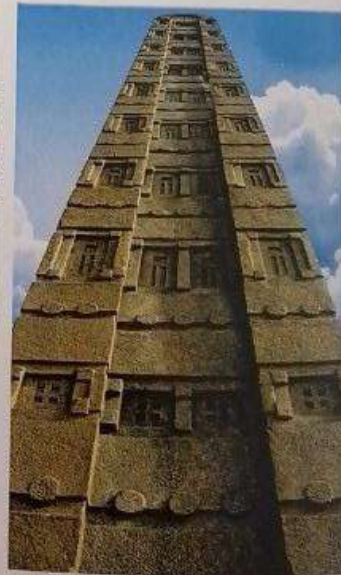
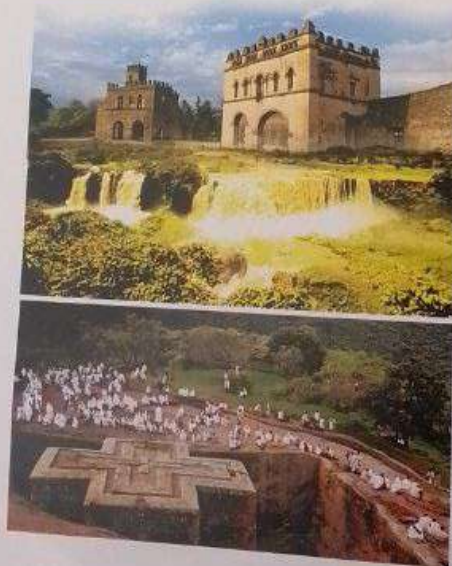
For Participants who come from abroad we can offer different optional tour programs based on their financial status and interest.

OPTIONAL TRIPS

Route 1: visiting Unity Park at the National Palace, Addis Ababa National Museum

Route 2: visiting Axum, Lalibela, Fasilides etc... (You need to buy a plane ticket, book a hotel and cover your accommodation to travel to these places)

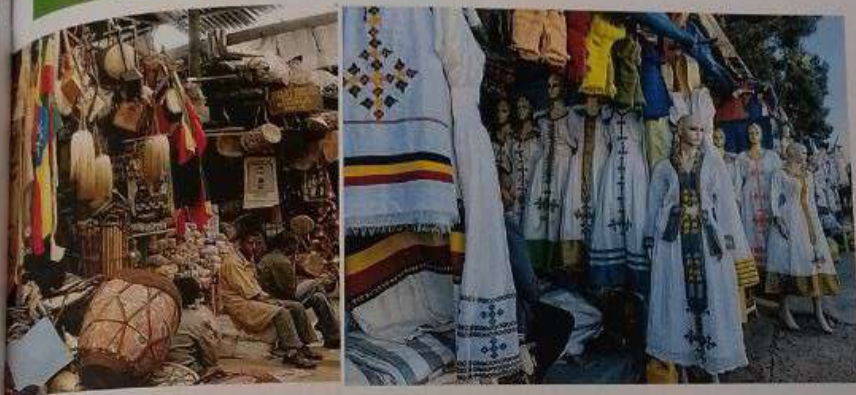
Route 3: There are many places that you can visit we will link you up with tour and travel agencies, who will guide you there.



Q34

Are there any shopping day plans in the program?

After the competition's final day, there will be free time in the evening following the prize ceremony. Depending on your travel schedules, gifts are available at souvenir stores, and you can purchase traditional clothes, in Addis Ababa city center.



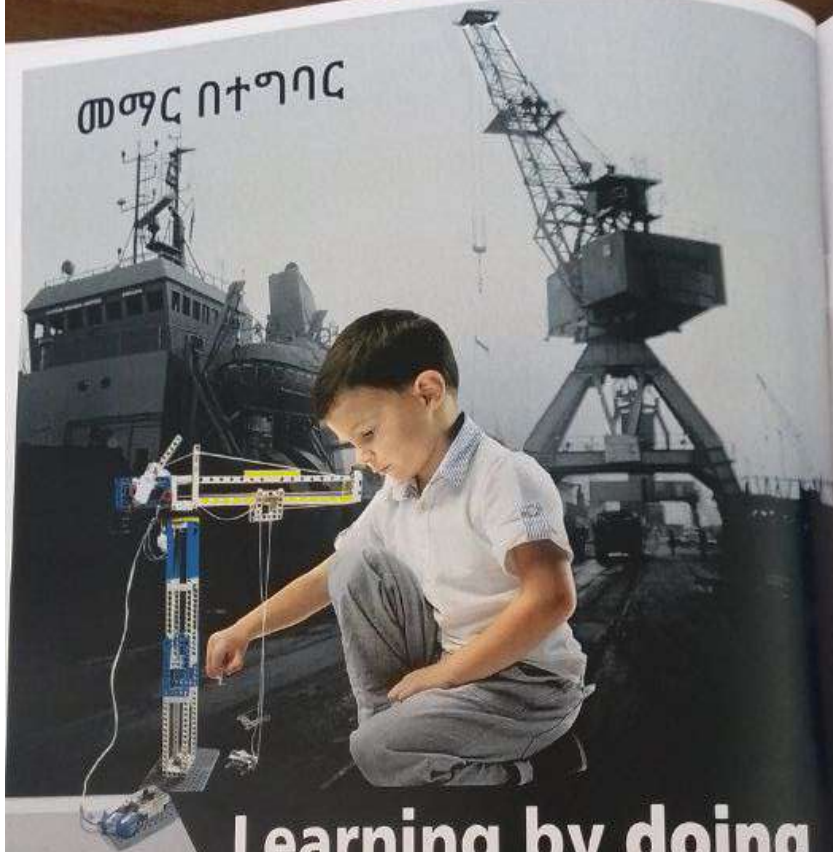
Q35

How will the last day transfers take place?

Shopping time and transfer planning will be made according to the flight hours of the groups on the last day. All groups will be transferred to bole international airport, Addis Ababa according to their flight times. But if you want to extend your stay in the hotel you can stay as long as you cover your own expenses.



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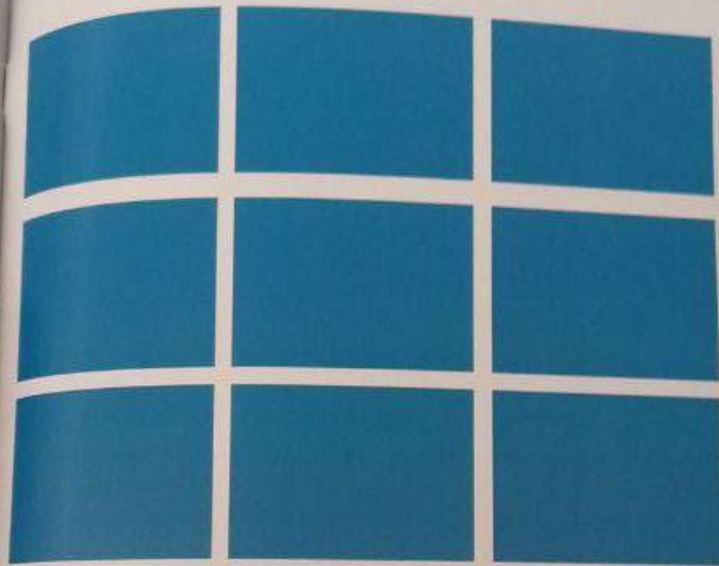


Learning by doing

Students will design, build and program
a robot to solve an engineering
challenge by exploring the application of
SCIENCE, TECHNOLOGY, **ENGINEERING** & MATH (STEM)
Exploration

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Thank you our Sponsors



Sample



2. Level (category):
- i. Elementary / Middle School (Vex IQ)
 - ii. High School (VRC)
 - iii. College And University (Vex U)

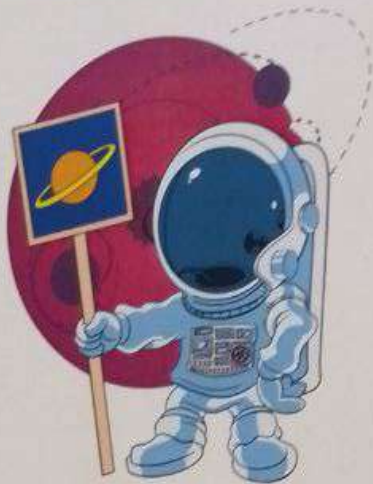
Choose your level and write it on the blank space _____

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Note:

Africa Robotics Championship Agenda

Jan 23, 2025 Thursday	Jan 24, 2025 Friday	Jan 25, 2025 Saturday
VEX Robotics Competition - Middle school Event Description Time 8:00-4:00 Pre-event team check in pit area set up inspection 9:30-4:00 Practice field open 10:00-12:00 Opening ceremony Speech by CEO Speech by a delegated person Speech by sponsors Lunch 12:30-1:30 Qualification matches begin 1:00-4:00 Pit area & venue closed 4:00-5:00	VEX Robotics Competition - Middle school Event Description Time 8:00-4:00 Pit area inspection opens 9:30-4:00 Practice field open 10:00-12:00 Skills and programming challenges rounds Lunch 12:30-1:30 Skills challenges continue 1:00-4:00 Pit area and venue closed 4:00-5:00	VEX Robotics Competition - Middle school Event Description Time 8:00-4:00 Pre-event team 9:30-4:00 Practice field open 10:00-12:00 Final matches Lunch 12:30-1:30 Awards & closing ceremonies 1:00-4:00 End of the program venue will be closed 4:00-5:00
VEX Robotics Competition - High school Event Description Time 8:00-4:00 Pre-event team check in pit area set up inspection 9:30-4:00 Practice field open 10:00-12:00 Opening ceremony Speech by CEO Speech by a delegated person Speech by sponsors Lunch 12:30-1:30 Qualification matches begin 1:00-4:00 Pit area & venue closed 4:00-5:00	VEX Robotics Competition - High school Event Description Time 8:00-4:00 Pit area inspection opens 9:30-4:00 Practice field open 10:00-12:00 Skills and programming challenges rounds Lunch 12:30-1:30 Skills challenges continue 1:00-4:00 Pit area and venue closed 4:00-5:00	VEX Robotics Competition - High school Event Description Time 8:00-4:00 Pre-event team 9:30-4:00 Practice field open 10:00-12:00 Final matches Lunch 12:30-1:30 Awards & closing ceremonies 1:00-4:00 End of the program venue will be closed 4:00-5:00
VEX U - College Event Description Time 8:00-4:00 Pre-event team check in pit area set up inspection 9:30-4:00 Practice field open 10:00-12:00 Opening ceremony Speech by CEO Speech by a delegated person Speech by sponsors Lunch 12:30-1:30 Qualification matches begin 1:00-4:00 Pit area & venue closed 4:00-5:00	VEX U - College Event Description Time 8:00-4:00 Pit area inspection opens 9:30-4:00 Practice field open 10:00-12:00 Skills and programming challenges rounds Lunch 12:30-1:30 Skills challenges continue 1:00-4:00 Pit area and venue closed 4:00-5:00	VEX U - College Event Description Time 8:00-4:00 Pre-event team 9:30-4:00 Practice field open 10:00-12:00 Final matches Lunch 12:30-1:30 Awards & closing ceremonies 1:00-4:00 End of the program venue will be closed 4:00-5:00



“Our search
for the
youngest African
scientists of
the future”

We are the Future!
and the future starts now

