YOUTH INNOVATION CHALLENGE

INTRODUCTION

The BIO Africa Academy was designed to facilitate the Transfer of Knowledge across the BIO Africa

Innovation Ecosystem, through:

- Webinars
- Workshops
- Courses
- Training opportunities

This year, the BIO Africa Academy has enhanced its Knowledge Transfer offering with the introduction of the Youth Innovation Challenge.

The Youth Innovation Challenge is designed to bring visibility to how learners apply themselves in conceptualising potential solutions for every day personal, family, community, school, and even global issues.

It encourages knowledge-building, the improvement of the understanding of sciences, building presentation skills and confidence in learners through the sharing of their research projects and investigations.

Notwithstanding their background or type of school they attend, each learner can produce exceptional and even novel work.

For this reason, the Youth Innovation Challenge aims to provide a level playing field on which learners can share their work with people of various fields and levels of sciences, the local and international community, their peers, and teachers from other schools, even family and friends.

Learners will get the opportunity to stand proudly beside their works, talk about their projects, and showcase their scientific research skills and the knowledge that they gathered during their investigations in their fields of interest.

The Innovation Challenge will be open to learners from Grade 8 to Grade 11, from South African High Schools in all the 9 Provinces in South Africa.

Learners whose projects successfully meet the criteria of the Challenge, will be afforded a platform at an Exhibition to showcase their science-based investigative projects at the BIO Africa Academy which will take place on the weekend of 27 -28 August 2022, prior to the 2022 BIO Africa Convention happening on 29 -31 August 2022 in Durban, KwaZulu Natal.

OBJECTIVES

- Create and make accessible a platform that nurtures the Science, Technology, Engineering and Maths (STEM) interests of High School learners

- Inspire creative thinking in learners on how they can combine their environmental circumstances or conditions, experiences, science-based knowledge, existing solutions, and new ideas or inventiveness to provide new or improved ways to solve problems

- Encourage learners to recognise STEM as one of the major instruments that can provide opportunities in socio-economic development, and guide them towards the understanding of the major role that STEM plays in addressing societal needs

- Provide a world class platform through which learners can demonstrate their scientific research, investigative, or model building skills and celebrate their achievements

APPLICATION QUALIFICATIONS

• The learner must be in Grades 8, 9, 10, or 11 in South Africa

• The learning institution must be registered with the Department of Basic Education, and meet all the requirements stipulated by the Department

• The learner can be from any of these learning institutions:

  - Public
  - Private
  - Rural
  - Urban
  - Farm
  - Home and On-line
  - Special Needs

• The programme is not exclusively for students studying traditional science subjects. The only criteria in this regard is that the idea and project be based on the indicated science Theme or Themes of the Challenge

• Each Project will be classified by Grade, and then into the applicable category as follows:

  - Poster
  - Experiment
  - Model
  - Demonstration
  - Collection
  - Invention

• Each learner is permitted to be a part of only one project

• A project may have more than one learner

SCIENCE PROJECT THEMES

NOTE: For the purposes of securing suitably qualified, interested, and willing volunteers to be judges, the number of themes and sub-themes will have to be selected and limited to the following:

- Environmental Sciences
- Biological Sciences
- Medical and Biomedical Sciences
- Pharmaceutical and Biopharmaceuticals
- Social Sciences
- Agricultural Sciences
- Animal Sciences
- Biotechnology
- Energy
- Mathematics
- Physical Sciences
- Earth and Space Science
- Engineering and Technology
- Information and Communication Technology
- Computer Science and Software Development

JUDGING CRITERIA

- Scientific Approach
- Records and Reports of Investigation and Research Process (Logbooks, Journals, etc.)
- Resourcefulness and Creativity
- Knowledge of the Science in the project field
- Socio-economic Links
- Thoroughness (Planning, Research, etc.)
- Visual Presentation (Demonstration, Explanation, etc.)

SELECTION OF JUDGES

- The judges will be experts in stated scientific themes.
- They will be from Research Institutes, HEI, and Private Organisations
- As far as possible, the judges should be volunteers who are already Participants or Stakeholders (previous or current) of BIO Africa or AfricaBio

GENERAL SAFETY RULES

1. Do NOT hurt or scare people or animals, including yourself, as part of the experiment or project
2. Do NOT publish the names or faces or identifying features of all the people who were involved in your experiment or research. Only the use of pseudo names is permitted.
3. Never eat or drink during an experiment
4. Wear protective goggles when doing any experiment that could lead to eye injury
5. Do not touch, taste, or inhale chemicals or chemical solutions
6. Respect all life forms. Do not perform an experiment that will harm an animal or human being
7. All experiments should be supervised by the designated teacher or guardian

8. Always wash your hands after doing an experiment
9. Dispose waste properly. Take note of the disposable waste bins location and labelling
10. Any projects that involve drugs, firearms, or explosives are not permitted
11. Any project that breaks any South African Laws is prohibited

PROHIBITED ITEMS

Ingestion, Absorption, or Inhalation of ANY Substance by ANY and ALL humans is NOT Permitted!

(NO Smelling, Drinking, Eating, Chewing, Swallowing of ANYTHING)

1. Fresh Tissue, Skin, Teeth or Bodily Fluids

2. Blood Products

3. Non-Human Vertebrate Animals and their parts, exception Unfertilized Eggs Shells

4. Pathogenic Agents:

    - Pathogenic Agents are Disease causing, or potential disease-causing Organisms such as Bacteria, Viruses, Viroids, Prions, Rickettsia, Fungi, Mould, etc
    - Organisms Collected, Isolated and/or Cultured from any Environment (e.g., Air, Soil, Water) are considered potentially Pathogenic
    - Raw or Partially Processed Human and Animal Waste is considered to contain potentially Pathogenic Agents

5. Recombinant DNA

6. Carcinogenic or Mutagenic Chemicals

7. Compressed Gas (Excluding: Helium, Carbon Dioxide, Air, Liquid Nitrogen)

8. Controlled Substances:

    - Prescription Drugs
    - Alcohol
    - Tobacco

9. Explosive Chemical

10. Hazardous Substances and Devices, including but not limited to:

    - BB Guns
    - Paint Ball Guns
    - Potato Cannons
    - Air Cannons

11. High Voltage Equipment

12. Highly Toxic Chemicals

13. Ionizing Radiation X-rays or Nuclear Energy

14. Radioactive Materials