Qualification Requirements for TGUP's Science Lab in a Box

The Global Uplift Project's Science Lab in a Box (SLaB) helps high schools deliver science education at international standard quality. It provides instruments, equipment, and supplies to carry out laboratory work in Physics, Chemistry, and Biology.

This document defines the requirements a school must meet to be a candidate for receiving a TGUP SLaB. The requirements are intended to ensure that the SLaB is effectively utilized and that students are commensurately benefited.

Staff

Recipient schools must have credentialed teaching staff trained at a university level in the fields of Physics, Chemistry, and Biology. Staff must be competent to set up a working laboratory, to conduct standard experiments as defined in the SLaB, and be able to test for learning according to national standards.

Curriculum

Courses in at least two of Physics, Chemistry, and Biology must exist as part of the school's standard curriculum. The courses must include laboratory work and be geared to nationally-normed exams required for university matriculation.

Facilities

The school must have facilities competent for hosting standard laboratory work. This includes, but is not limited to, work benches with water, electricity, and gas. Facilities must exist to lock away expensive equipment when not being used.

Feedback

Schools and teachers must be willing to work with TGUP to report on the outcomes of the SLaB and students' work. This includes: reporting on the adequacy of equipment for individual experiments; reporting on nationally normed test scores **BEFORE** the SLaB installation, and **AFTER.**

TGUP's Science Lab in a Box
School Application

TGUP's Science Lab in a Box (SLaB) is available at no charge to schools that are qualified to use it appropriately. Please complete the below questions and return the completed form by email to NCDP: kimydala@yahoo.co.uk

School name and address: NYAKISA SEC SCHOOL

P.O BOX 19, RWASHAMAIRE, NTUNGAMO

Principal's name and email address: ATUMUZA DOREEN nyakisasecmdays@gmail.com

Senior Science Department official overseeing SLaB, and email address: Twiamatsiko Telson, twinetel@gmail.com

Does your school have dedicated space for a science lab? Yes

Does that space have adequate work areas for conducting experiments? Yes

Does that space have locking cabinets to ensure security of equipment? Yes

Does the room have electricity? Yes water? Yes gas? Yes

Circle which laboratory classes are part of the school's formal curriculum:

(Biology) — (Chemistry) — (Physics) — Other: _____

Is there a dedicated, university-trained teacher for each class? Yes

Does your school meet the standards for national university matriculation? Yes

How many students in the school? 333 # Boys 127 # Girls 206

How many teachers in the school? 20

Twenty Teachers

Science Education Performance Summary: Academic Year: 2024

Biology Program Performance

Student Enrollment:

- Number of O-Level Biology Students: 54
- Number of A-Level Biology Students: _____

O-Level Biology Results: Test Date: Oct/Nov 2024 (Uganda Certificate of Education - UCE)

- School Average Score: C
- Pass Rate (Grades 1–6): 68 %

A-Level Biology Results: Test Date: _____ (Uganda Advanced Certificate of Education - UACE)

- School Average Score: _____
- Pass Rate (Grades A–E): _____%

Chemistry Program Performance

Student Enrollment:

- Number of O-Level Chemistry Students: 54
- Number of A-Level Chemistry Students: _____

O-Level Chemistry Results: Test Date: Oct/Nov 2024 (UCE)

- School Average Score: C
- Pass Rate (Grades 1–6): 61 %

A-Level Chemistry Results: Test Date: _____ (UACE)

- School Average Score: _____
- Pass Rate (Grades A–E): _____%

Physics Program Performance

Student Enrollment:

- Number of O-Level Physics Students: 54
- Number of A-Level Physics Students: _____

O-Level Physics Results: Test Date: Oct/Nov 2024 (UCE)

- School Average Score: C
- Pass Rate (Grades 1–6): 66 %

A-Level Physics Results: Test Date: _____ (UACE)

- School Average Score: _____
- Pass Rate (Grades A–E): _____%

Higher Education Progression: For the Academic Year _____:

- Total number of graduates: _____
- # of graduates proceeding to university/college: _____
- # of graduates planning on university studies in STEM (Science, Technology, Engineering, and Mathematics Fields): _____%

Is your school willing to provide structured feedback to TGUP on:

- Specific outcomes at the experiment level? yes
- Overall outcomes at the class level? yes
- Improvements on standardized national tests at the school level? yes
- Improvements to matriculation at the school level? yes

School Principal's signature and date:

Atumuza Doreen

Science Dept. Official's signature and date:

Twinamatsiko Telson

NCDP Official's signature and date:

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TGUP'S Science Lab in a Box (SLaB)

IDENTIFY WHICH EXPERIMENTS YOUR SCHOOL IS DOING OR PLANS TO DO

	Currently doing	Will do with SLaB	Will not do	Not in curriculum
Biology Experiments				
1. DNA Extraction			✓	
2. Classifying Plant & Animal Cells		✓		
3. Solute Concentration Effect on Cells	✓			
4. The Cell Cycle		✓		
5. Photosynthesis	✓			
6. Fermentation	✓			
7. Bacterial Growth		✓		
8. Natural Drug Discovery		✓		
9. Food Web Using Owl Pellets	✓			
10. Water Quality Testing		✓		
Chemistry Experiments				
1. Mass, Volume and Density	✓			
2. Chemical Reactions & Reagents	✓			
3. Identifying Cations	✓			
4. Acid-Base Titration	✓			
5. The Universal Gas Constant.		✓		
6. Specific Heat of Metals		✓		
7. Acid / Base Reactions	✓			
8. Products of Combustion		✓		
9. Temperature vs. Reaction Rate	✓			
10. Temperature vs. Solubility	✓			
Physics Experiments				
1. Free Falling Projectiles		✓		
2. Newton's Laws in Equilibrium	✓			
3. Circular Motion		✓		
4. Work & The Conservation of Energy	✓			
5. Simple Harmonic Oscillators		✓		
6. Impulse & Conservation of Momentum		✓		
7. Sound and Light Wave Phenomenon		✓		
8. Electrostatics, Ohm's Law & Circuits	✓			
9. Magnetism/Electromagnetic Induction	✓			
10. Geometric Optics - Mirrors & Lenses	✓			