

NJENHUS SEC SCHOOL



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 **Science Lab in a Box**. The requirements are intended to ensure that the **SLaB** is effectively utilized and that students are commensurately benefited.

Requirements:

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; and matriculation rates before and after **SLaB** installation.



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 cathyd@tgup.org

School Name, Address, and website: ST. DOMINIC NJENG'U SECONDARY SCHOOL
P.O. BOX 192-10104, MWEIGA

Principal's name and email address: MARY MATHENGE. Marymathenge@gmail.com

Senior Science Department official overseeing SLaB, and email address:

IMELDA CHEPKIRUI . Chepkiruiimelda@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? 107 # Boys 71 # Girls 36

How many teachers in the school? 12

of students who study laboratory science in any given year 110



who study Biology in any given year: 65

who study Chemistry in any given year: 110

who study Physics in any given year: 70

% of students who matriculate every year to college or university 40


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

Name (if any) of the TGUP partner who has brought SLaB to your school's attention:

KIINI SUSTAINABLE INITIATIVE

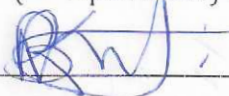
School Principal's signature and date:

 26/8/2023

Science Dept. Official's signature and date:

FOR:  26/8/2023

TGUP Partner (or equivalent) Official's signature and date:

 26/8/2023

TGUP * (650) 575-3434 * 4164 Stanford Way, Livermore, CA 94550 * tgup.org
TGUP is an IRS registered 501c3 nonprofit. Tax ID#: 20-8800729





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				<input checked="" type="checkbox"/>
1. DNA Extraction		<input checked="" type="checkbox"/>		
2. Classifying Plant & Animal Cells		<input checked="" type="checkbox"/>		
3. Solute Concentration Effect on Cells		<input checked="" type="checkbox"/>		
4. The Cell Cycle		<input checked="" type="checkbox"/>		
5. Photosynthesis	<input checked="" type="checkbox"/>			
6. Fermentation	<input checked="" type="checkbox"/>			
7. Bacterial Growth		<input checked="" type="checkbox"/>		
8. Natural Drug Discovery		<input checked="" type="checkbox"/>		
9. Food Web Using Owl Pellets		<input checked="" type="checkbox"/>		
10. Water Quality Testing				<input checked="" type="checkbox"/>

Chemistry Experiments	<input checked="" type="checkbox"/>			
1. Mass, Volume and Density		<input checked="" type="checkbox"/>		
2. Chemical Reactions & Reagents		<input checked="" type="checkbox"/>		
3. Identifying Cations		<input checked="" type="checkbox"/>		
4. Acid-Base Titration	<input checked="" type="checkbox"/>			
5. The Universal Gas Constant.		<input checked="" type="checkbox"/>		
6. Specific Heat of Metals		<input checked="" type="checkbox"/>		
7. Acid / Base Reactions		<input checked="" type="checkbox"/>		
8. Products of Combustion		<input checked="" type="checkbox"/>		
9. Temperature vs. Reaction Rate		<input checked="" type="checkbox"/>		
10. Temperature vs. Solubility		<input checked="" type="checkbox"/>		

Physics Experiments	<input checked="" type="checkbox"/>			
1. Free Falling Projectiles		<input checked="" type="checkbox"/>		
2. Newton's Laws in Equilibrium		<input checked="" type="checkbox"/>		
3. Circular Motion		<input checked="" type="checkbox"/>		
4. Work & The Conservation of Energy		<input checked="" type="checkbox"/>		
5. Simple Harmonic Oscillators	<input checked="" type="checkbox"/>			
6. Impulse & Conservation of Momentum		<input checked="" type="checkbox"/>		
7. Sound and Light Wave Phenomenon		<input checked="" type="checkbox"/>		
8. Electrostatics, Ohm's Law & Circuits		<input checked="" type="checkbox"/>		
9. Magnetism/Electromagnetic Induction		<input checked="" type="checkbox"/>		
10. Geometric Optics - Mirrors & Lenses		<input checked="" type="checkbox"/>		

