Semi-Finalist Support

2025 Teacher Guide

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Welcome to GSTEP 2025!

Dear Esteemed Teachers,

We are thrilled to celebrate you as a key part of the GSTEP Challenge journey!
Your dedication to nurturing young minds and inspiring creativity has been instrumental in shaping the innovative ideas that have brought your students to the semi-finalist stage of the 2025 Ghana Science and Tech Explorer Prize Challenge (GSTEP).

Your role as educators and facilitators is pivotal at this phase of the GSTEP Challenge. Your guidance, encouragement, and expertise will empower these young innovators to refine their ideas, develop prototypes, and realise the potential of their projects.

This guide has been crafted to equip you with the tools and insights needed to support your students throughout this exciting journey. We applaud your continued commitment to STEM education and your role in shaping the next generation of thinkers and doers.

Together, let's empower our students to reach new heights and contribute meaningfully to making our communities better.

Best wishes,
The GSTEP Team

Aims

The GSTEP Challenge is a unique opportunity for young people to learn more about entrepreneurship, innovation, and Science, Technology, Engineering, and Mathematics (STEM). It presents a new and exciting way for young people to engage with Science and Technology through practical learning, developing skills such as problem-solving, presentation skills, communication, teamwork and entrepreneurship skills.

The GSTEP Challenge provides all of the resources you need to take part, including lesson plans to support the application process, mentorship and coaching for semi-finalists and finalist teams and additional training where necessary.

The Challenge Statement

Create a product or solution that uses Science or Technology to make the world around you a better place

Themes

Live healthier
Providing people with what they need to lead happy and healthy lives, including physical health and mental wellbeing. This covers topics that relate to improving health, such as nutrition, hydration and exercise.

Live greener
Protecting the environment and saving the planet's resources. This covers topics that relate to the planet, such as climate change, conservation and waste management.

Live together
Tackling social issues and helping people to live better together. This covers topics that relate to society, such as discrimination, communication, transport and crime.

Overview of GSTEP

Stages of the Challenge

Application Stage (14th October - 18th November 2024):
Teams are invited to make an application to the GSTEP Challenge. Teams should comprise 4 - 6 students and each team must be paired with a teacher or adult representative.

Lesson plans and other materials are available to support teams to develop their ideas and complete their applications.

Assessment Stage (November - December 2024):
A team of expert assessors will decide and select 105 semi-finalist teams from the Greater Accra, Ashanti and Eastern regions to move on to the next stage of the challenge

Semi-finalist Stage (January - February 2025):
These semi-finalist teams will be supported to develop their ideas through the provision of expert mentors, technical coaches, training materials and resources. They will be supported to develop a minimum viable product. The products will be evaluated by a team of expert judges and 45 teams from Greater Accra, Ashanti and Eastern regions will be selected to move on to the Finalist stage.

Finalist Stage (March - May 2025):
The finalist teams will be supported to develop their ideas further through the provision of bespoke materials and resources, seed funding, industry engagements through industry visits, and continuous personalised engagements with their assigned mentors and coaches. They will be required to complete their business plans and final prototypes.
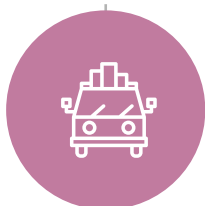
Pitching and Judging Stage (June 2025):
The finalist teams will have the opportunity to pitch their ideas, business plans and demonstrate their working prototypes in front of a team of expert judges.

Exhibition & Awards Ceremony (July 2025):
All finalist teams will showcase their prototypes to the general public at an exhibition. A prestigious awards ceremony will be held to celebrate finalists, recognize outstanding teams and announce winners of the Challenge.

Homecoming (September 2025)
Schools of all category winners receive STEM materials to improve the learning experience and outcomes in the schools.

DreamOval Foundation is a nonprofit that focuses on improving quality of education through science, technology, mathematics and engineering. The DreamOval team is the lead implementer of the GSTEP programme. The Foundation engages schools through Ghana Education Service (GES), coordinates all stakeholders for the GSTEP programme and supervises the activities of the Youth Steering Group.

Partnership Bureau is a Ghanaian non-profit that works to reimagine how communities, grassroots, local and national organisations across the Global South can draw on collective power and address the imbalances within the international development sector through innovation, intervention and impact. Partnership Bureau manages the public and private partnerships in the implementation of the challenge.

Shulem Lake Limited is an IT and software development company committed to driving digital transformation and STEM education across Ghana. They offer hands-on training in robotics, drone construction, ERP software, and more.
Shulem Lake will support this year's challenge by providing STEM kits, resources, and STEM training to participating teams.

Practical Education Network (PEN) is a non-profit organisation specialising in practical STEM education through a hands-on learning approach. With expertise in curriculum development and training, they are at the forefront of educational technology, incorporating innovative tools and approaches to make STEM learning more engaging and effective.
PEN will provide coaching and mentoring support to the participants of this year's challenge.

Semi- Finalist Expectation

It is exciting to be selected as a semi-finalists. Your team's journey in this challenge is right about taking off. This is a very important stage and you will be required to complete key activities and ensure your team's full participation in the GSTEP program. Details of activities and deliverables, as well as key resources to assist you in completing the programme are provided below.

Development of Team Canvas and Business Model Canva

All semi-finalist teams are required to develop a Team Canvas and Business Model Canvas. They will be supported through the help of the Business Mentors to develop these documents using the templates provided. You can reference pages **22** - **24** in the semi-finalists handbook for details on these templates.

Minimum Viable Product (**MVP**) Video Development

All semi-finalist teams are required to submit a 5-minute video presentation of their MVP. They will be supported with the help from the coaches to develop their MVP and create a video to highlight the key features of the MVP and demonstrate its functionalities. You can reference **pages 11** - **16** in the semi-finalists handbook for details on developing the MVP video.

Timelines and Deadlines

You are required as a Team Facilitator to take note of the timelines of all activities and deliverables and prepare adequately for each activity. Refer to weekly activities in the Activities of Timeline table on **pages 9 and 10** of the semi-finalist handbook to identify all activities and deliverables. Failure to comply with the deadlines communicated can impact your ability to complete the program.

Data Collection (**M&E**)

To ensure the sustainability and effectiveness of the GSTEP program we will be requesting your feedback during various phases of the program. You are required to participate in all data collection activities to support the GSTEP team to improve the program and experience for you, your team and future participants.

Emergency Communication

If a participant of the GSTEP program is exposed to a harmful situation by virtue of engaging in any GSTEP-related activity, you are required to communicate the situation to the GSTEP team immediately. In view of this, you are required to carefully review the safety protocols provided on **pages 26** of the semi-finalists handbook and ensure that your team adheres to all safety guidelines provided. You will reach us using the contact information provided here **Franklina (DreamOval Foundation): 0595703311**

Change Requests

We appreciate that things may not always go as planned so you may have to adjust. Kindly note that if you would want to make changes in your team by replacing team members, you will be required to submit a Team Change Request form. Also, if you should decide as a team facilitator that you do not wish to progress with the challenge and would like to be replaced, you would have to submit a Team Facilitator Change Request Form.

Kindly note that you can only make changes once and this change should happen by the end of the semi-finalists stage. No more changes will be accepted at the finalists stage. If any team member should opt out of the challenge for any reason, a replacement will not be allowed.
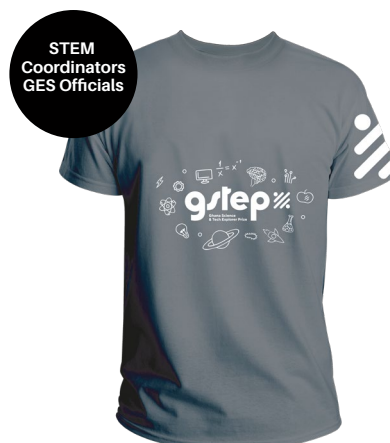
When in need of a change request form, kindly contact **Franklina (DreamOval Foundation) - 0595703311**

GSTEP Colour Codes

To ensure easy identification of participants during events and activities, each participant of the GSTEP programme will be provided with an assigned coloured t-shirt. Below are the colour codes for each participant.

Please note that

You are required to wear the regional colour-coded GSTEP t-shirt and name tag assigned to you for all in-person GSTEP 2025 events.

Mentors Coaches

Greater Accra Region finalists

Eastern Region finalists

Ashanti Region finalists

Volunteers Vendors Media Team

GSTEP Partners Youth Ambassadors Sponsors & Donors

STEM Coordinators GES Officials

Emails
The primary mode of communication with semi-finalist teams will be via email. All detailed updates on events, activities, deadlines and programmes will be provided via email. Our emails to you will be twice weekly on **Tuesdays and Fridays** so regularly check your inbox for information from the GSTEP team.
You can reach the GSTEP team via **challenge@gstep.org.gh.**

WhatsApp Group and Channel
A WhatsApp group will be created for semi-finalists in each region to assist in the dissemination of information quickly and effectively. It is important to note that the information provided here will be brief and not contain as much information as those shared via email. You are required to follow the **GSTEP 2025 WhatsApp Channel**

SMS
Reminders on events, updates and programmes will be shared via SMS.

Phone
Finalists will be reached out to by phone for key information. You must share your right contacts through which the GSTEP team can easily reach out to you. You can reach out to the GSTEP team via these contacts: **Franklina: 0595703311 (DreamOval Foundation), Gideon: 0577724450 (Shulem Lake) and Kezia: 0550692449 (PEN).**

Website
Updates on events and activities will be shared on the GSTEP website.

Social Media
You are highly encouraged to stay up-to-date on our activities, events and programmes on our social media pages. Follow us using the below handles:
- **@gstep_gh**
- **Ghana Science & Tech Explorer Prize**
- **@gstep_gh**
- **Ghana Science & Tech Explorer Prize**

Official Hashtags
You are required to use the following hashtags in all your related GSTEP-related posts on social media.
#GSTEP #GSTEP2025 #GSTEPChallenge #BeSTEMPowered #STEMeducation

Introduction

The GSTEP Business mentorship program is an exciting and rewarding way to prepare young people for the world of work and build important skills to enable them to excel. Each semi-finalist team will be assigned a business mentor who will support the team and provide guidance to help the team complete their Business Model Canvas and Team Canvas. This is what is required at the semi-finalist stage. Refer to **pages 22 - 24** in the semi-finalists handbook for details.

Practical Education Network (PEN)

The GSTEP mentor program is managed by Practical Education Network (PEN). PEN specialises in practical STEM education through a hands-on learning approach. Their role is to provide the mentors with the needed capacity training to adequately support your team and help your team to build much needed skills in business development and enterprise soft skills.

Mentor Role

At the semi-finalist stage, business mentors will be fully focused on supporting teams to complete their Team Canvas and Business Model Canvas, as well as any other support the mentor deems he/she can provide. It is important to note that mentors are not required to provide technical support in the development of a team's prototype. Technical issues related to the development of prototypes should be presented to technical coaches. Mentors who offer to provide technical assistance do so at their own free will.

Meeting Times

Introduction

The GSTEP Business mentorship program is an exciting and rewarding way to prepare young people for the world of work and build important skills to enable them to excel. Each semi-finalist team will be assigned a business mentor who will support the team and provide guidance to help the team complete their Business Model Canvas and Team Canvas. This is what is required at the semi-finalist stage. Refer to pages 22 - 24 in the semi-finalists handbook for details.

Communications and support

If you have any further questions or require any assistance on the mentor programme, please email challenge@gstep.org.gh or call **Kezia: 0550692449 (PEN) within the hours of 8 am to 5pm.**

Coaching

Introduction

A key component of the GSTEP program is the acquisition of technical skills to transform ideas into solutions. With support from technical coaches in the Technical Coaching program, semi-finalists teams will have the opportunity to learn new technical skills to enable them to design, make and assemble prototypes of the ideas they submitted for the Challenge. PEN is the same organisation managing the technical coaching program.

Technical Coach Role

A technical coach is assigned to a team to assist in developing their prototype. It is important to note that the role of a technical coach is different from that of a mentor. A technical coach provides technical guidance and support to enable a team to build or develop a prototype of the idea they submitted. At the semi-finalist stage, the technical coaches will support the teams to build their Minimum Viable Products (MVP) and develop a video highlighting the key features of your team's MVP and its functionalities. Technical coaches are under no obligation to provide semi-finalist teams with support to complete their Business Model Canvas or Team Canvas. If a coach offers to do so, he/she does so at their own free will.

Meeting Times

Technical coaches will meet semi-finalists at the agreed periods with the team facilitator. During these sessions, coaches will work to understand what the team is seeking to achieve, provide technical guidance on what can be done and provide any other needed support the team requires to complete their MVPs for the Challenge. You are encouraged to engage the PEN team if you have challenges with your assigned coach.

Communications and support

If you have any further questions or require any assistance on the mentor programme, please email challenge@gstep.org.gh or call **Kezia: 0550692449(PEN) within the hours of 8 am to 5pm.**

Health & Safety

You are required to ensure that your team takes the right health and safety precautions during the development of your prototype. Teams must put on the right protective gear during the making and assembling of prototypes. Kindly reference **page 26** of the semi-finalists handbook and ensure that your team adheres to all safety guidelines provided.

Resources & Materials

Introduction
To support you in the development of your prototype, the GSTEP team will provide some materials. At the semi-finalist stage, each team will be provided with the GSTEP One4All Kit.

Shulem Lake
Shulem Lake is the organisation leading and providing materials for the teams for their prototype development. Shulem Lake Limited is an IT and software development company committed to driving digital transformation and STEM education across Ghana. Shulem Lake offers hands-on training in robotics, drone construction, ERP software, and more. With a wealth of experience in building prototypes, they will support the semi-finalist teams with the required materials and resources to help your team build your dream MVP.
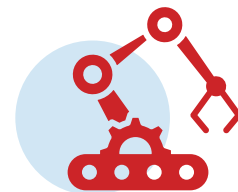
One4All Kit
The GSTEP One4All Kit is a carefully curated kit with selected materials that is essential for teams at the semi-finalist stage to build their MVP. It contains materials that can support experimenting with various topics to support the learning experience in the classroom. The materials provided within the kits capture projects that fall under the following categories:

Electrical/Electronics   Mechanical   Robotics/IoT/Automation.

The materials for the kits were selected based on data analysis from past challenges, which highlighted these components as essential materials used in prototype development by the selected finalists teams. The kit goes a step further as a tool that can be utilised to equip students with essential skills and knowledge in the field of electronics, IoT, and automation projects. A range of resources in the form of component guidance and video demonstrations have been made available on **https://shulemlake.com/gstep/** for your reference. For more information on the kits, you can reference **pages 13 -15** in the semi-finalists handbook.

For assistance on issues related to you mobilising resources, your MVP development or the use of your One4All Kit, kindly contact: **Gideon Mensah** - **0545886695**

Financing

Introduction
We understand how important it is to be able to finance activities for the GSTEP programme. Below are key areas of the Challenge that require financial commitment and how they will be covered by GSTEP.

Transportation costs
All transportation costs to and from **mandatory events** will be covered by the GSTEP team. All team facilitators will be required to submit all transportation related costs at the start of events. Fares will always be cross checked with current prices and amount agreed on before reimbursements are made.

All increments in transportation fares should be communicated to the GSTEP team and approved prior to each event. Increments communicated on the day of the event will not be disbursed.

Data & Airtime
To support online sessions with mentors, team facilitators will be provided with a monthly allocation of **GHS 60** for data and airtime for the month of January and February. Kindly note that this is a supplemental allocation to **support** your mentorship sessions and may not necessarily cover your entire data and airtime costs.

Community Support
At this stage of the challenge, community engagement is not required however you are strongly encouraged to actively seek support from your school or community at the initial start of the challenge. This will make it easier for you to seek support at the Finalist stage where it is required. You are encouraged to actively seek out people who can provide you with technical guidance, materials, or services for example artisans, tradesmen, tailor, blacksmiths, and your local community leader among others.

Instructions

This section outlines the criteria that the assessors will be using to assess each team's submission at the end of the semi-finalists stage. Kindly take note of these requirements to increase the chances of your team making in to the finalist stage.

Good luck on your mission to become the next best inventors!

Impact
• Clearly explains the problem and its relevance.
• Articulates the importance of solving the issue.
• Identifies affected groups and anticipated benefits.
• Provides evidence/potential of positive societal impact.

Innovation
• Effectively solves the stated problem.
• Operates reliably and has practical application in a real-world context.
• Highlights originality in materials, processes, or outcomes.
• Distinct from or improves existing solutions.
• Has reference to principles of STEM learnt in class. The principles must be stated and linked with the methods used in the solution.

Enterprising (Feasibility)
• Documents MVP development steps (experiments, prototypes, etc.).
• Effectively uses resources, with focus on local or innovative options.
• Shows affordability, scalability, and market potential.
• Aligns with target audience needs and with implementation plans.

Teamwork
• Shows effective collaboration with clear roles and contributions.
• Demonstrates team communication and problem-solving.
• Utilises team members' strengths.
• Highlights teamwork insights or lessons.

Communication
• Presents the project clearly and engagingly.
• Outlines marketing strategies for target audiences.
• Justifies channels and aligns messaging to audience needs.

Risk Factors (Health, Safety and Environmental Considerations)
• Identifies and addresses safety and ethical risks.
• Prevents misuse and unintended negative impacts.
• Evaluates and mitigates environmental harm.

Perseverance Awards

The **Perseverance Awards** celebrate teams that demonstrate exceptional dedication and resilience, even if they do not progress to the semi-finalist or finalist stage. This year, two (2) awards will be presented: one for a team from the application stage and another to a team from the semi-finalist stage

Award Categories

This year, two awards will be presented:

Application Stage Perseverance Award: For a team from the initial application stage that didn't get selected to the semi-finalist stage but completed their projects and stood out for their creativity and effort.

Semi-Finalist Stage Perseverance Award: For a team from the semi-finalist stage that didn't progress to the finalist stage but displayed tenacity and commitment to finish their project.

Being part of the semi-finalists qualifies you to participate in the Perseverance Awards program if you **don't qualify for the finalist stage.**

Six teams who don't qualify as finalists will have the opportunity to participate in the Exhibition and Awards ceremony upon participating in the Perseverance Program and meeting the judging requirements.

Details on the application for the Perseverance program will be communicated in due time.

GSTEP Challenge 2025
WHATSAPP CHANNEL

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@gstep_gh