Tech Missions - Facilitator's Guide

Welcome Boys and Girls Club Facilitators to the **PowerU "Tech Missions" Facilitator's Guide;** this experience is powered by Learning Blade!

Tech Missions is the second part of the modular experience that will help students be immersed into the world of STEM and to create clear pathways into STEM careers!

Here are a few instructions and hints for you as Facilitators of this experience.

SUMMARY

After the STEM-based Escape Room, students will work as teams to complete missions, focused onSTEM careers of today. To enable this opportunity, you will leverage a website called Learning Blade to manage students and quickly determine the winner of the game. The total duration of this experience is approximately 60 minutes.

We have selected 3 missions of similar difficulty from the Learning Blade platform. These missions will expose the students to STEM skills and careers through solving real-world problems. Generic templates have been created and uploaded on your behalf, so you can concentrate on creating an exciting and engaging experience!

THE SETUP (10 min)

1. Engage the students by introducing the game and what they are about to learn. See **Conversation Guide** below for ideas!
2.
3. Divide the students into teams (2-4 students recommended as required based on the number of devices).
    a. Example: Team1, Team2, Team3...Team10
4. Provide each team with login credentials as outlined in **Appendix A** of this guide.

HOW TO PLAY (40 min)

1. Have each team click to accept and start the mission by logging into Learning Blade.
2. Review the "Mission Guide" for the assigned mission.

a. If the Mission Guide doesn't auto play, you may manually select it in the upper right-hand portion of the green box:

3. Once all teams have completed the Mission Guide, it's time to play!

    a. Set & start a timer for 40 minutes.
    b. Tasks do not need to be completed in order.
    c. All team members should take a turn leading a task.

4. Once the game is over, allow students to take a break (as needed) so you can identify the winner.
    a. How to determine the "Tech Missions" winner:
        i. Login to Learning Blade with the provided teacher credentials.
        ii. Navigate to the "Dashboard" tab and select "Class", then "Mission". Select "Teams" for the "View by" option. You'll have to repeat this for each "Mission" to see which team has scored the most points.
        iii. The associated points will show under the "Leaderboard" section:

        iv. **The team with the most points wins!!**
5. Announce the winner and prizes!

THE WRAP-UP (10 min)

As each team was assigned a different mission, facilitate a discussion where students can share what they learned about their mission. See **Conversation Guide**.

GOOD TO KNOW INFO, TIPS & TRICKS

- You can review a quick tutorial here: Getting Started with Learning Blade
- A general guide to facilitate the game and dialogue with the students has been provided in the **Conversation Guid**e as reference. Feel free to use and/or adapt as you see fit!

CONVERSATION GUIDE

Tech Missions Game Intro (The SETUP):

Have any of you heard or seen the movie Hidden Figures? Well, in the Tech Escape you learned about **Dr. Gladys West, who** is another one of America's hidden figures.

She was known for her contributions to the mathematical modeling of the shape of the Earth. Her work led to the invention of the Global Positioning System; which is also known as?

- A: GPS

We also learned about **Garrett Morgan, Mark Kean,** and **Marie Van Brittan Brown**. Can anyone share with us something they learned about those pioneers?

- *Marie Van Brittan Brown – invented the first video home security system in 1966. It consisted of peephole, a sliding camera, television monitors and two-way microphones. This created a system called closed circuit television system for surveillance.. also known as CCTV. Her invention paved the way for the technology we use today.*
- *Garrett Morgan – Notable inventions: sewing machine, traffic light, gas mask. The gas mask was instrumental in saving lives by protecting the wearer from smoke and ammonia.*
- *Mark Kean/Dean – co- inventor of IBM's original personal computer and the color PC monitor changing how we interact with the internet. This technology has allowed for the creation of keyboards, printers and all the things that connect to your computer…*

Each of these pioneers helped pave the way to what we call STEM today. So now we're going to learn about some current-day STEM careers. As part of our next experience, Tech Missions we are going to play a game of solving some real-world problems.

There are three missions, Hack Attack, Robot Rescue, and Haiti Orphanage.

- In the **Hack Attack mission**, your school's website has been hacked! You learn how to create and protect a website, apps, and social media to make sure it doesn't happen again.
- In the **Robot Rescue mission**, you will learn how to use sensors, circuits, and computers to design robots.
- In the**Haiti Orphanage** mission your help is needed to help design an environmentally-sound orphanage for those that were left homeless after an earthquake in Haiti.

Doesn't that sound exciting?! Are you ready for the challenge?

Ok, so in just a minute, I am going to divide you into 2 (or 3 depending on class size) teams. Each team has been assigned a different mission in Learning Blade. You will work in these teams of 2-4 to complete as many tasks as you can within the allotted time of 40 minutes.

::Divide groups into teams of 2-4 students::

::Distribute login credentials. ***See Appendix A****::*

HOW TO PLAY

I have given you each a login. One person should accept the mission and log in to Learning Blade using that login. Once your team has logged in. Look for the "Mission Guide" in the top green bar to learn about your mission.

Once your team has viewed the mission guide, raise your hand.

Ok, now that everyone has accepted their mission, we are READY TO PLAY!

I'm going to set the timer for 40 minutes and when I say "Go!", your team should complete as many of those tasks on the right as possible.

- Everyone on the team should take the lead on at least one task.
- It may be helpful to have someone keep time and have a process for ensuring that everyone can weigh in on answers before answering. You'll get up to 2 tries to get the point.
- Remember, you don't have to go in order!!

Before we get started, are there any questions? READY, SET, GO!

*::*Give 10 minute and 5 minute warnings before time is up::

GAME OUTRO: THE WRAP-UP (10 minutes)

Alright, teams, time is up! Please take a break while we determine the winner.

Okay, so before we announce the winning class… let's talk a little about the missions.

1. What did you like about your assigned mission? (asked live to all teams)

2. What did you dislike about your assigned mission? (asked live to any team willing to answer)
3. What role(s) did you learn about? (asked live to all/most teams)
4. What did you learn about academic requirements (asked live to all/most teams)
5. By show of hands, did this exercise make you more excited about stem? Raised hands = Yes, hands left down = No. Ask a few why not and see if other students agree

As you may have noticed, there are so many careers in STEM that make a positive impact in our world. With how fast technology is advancing, there are even more careers that YOU will create to shape the

future. I hope you were able to see that YOU have the power to change the world and the world of those around you with more STEM knowledge and a potential STEM career.

So now the moment we've been waiting for... the winner is ::insert team name::!

Congratulations, ::insert names of winning team members::! You did an outstanding job, and your hard work paid off! But let’s not forget you are all winners in your pursuit to learn about STEM.

I hope you all enjoyed today's activity and learned more about STEM careers as part of the full PowerU experience. You can continue to explore these careers on your own by checking out the PowerU Summary we are going to provide you. And remember, STEM is all around you, so keep exploring, learning, and asking questions. The possibilities for you are limitless as you reimagine your future in STEM.

APPENDIX A:

LEARNING BLADE LOGIN INFORMATION

STUDENT CREDENTIALS

LastName	UserName	Password	Grade	Student ID
Group 1	HackAttack1	$PwdHack1	6	HackAttack1
Group 2	HackAttack2	$PwdHack2	6	HackAttack2
Group 3	HackAttack3	$PwdHack3	6	HackAttack3
Group 4	HackAttack4	$PwdHack4	6	HackAttack4
Group 5	HackAttack5	$PwdHack5	6	HackAttack5
Group 6	HackAttack6	$PwdHack6	6	HackAttack6
Group 7	HackAttack7	$PwdHack7	6	HackAttack7
Group 8	HackAttack8	$PwdHack8	6	HackAttack8
Group 9	HackAttack9	$PwdHack9	6	HackAttack9
Group 10	HackAttack10	$PwdHack10	6	HackAttack10
Group 1	Robot1	$PwdRobot1	6	Robot1
Group 2	Robot2	$PwdRobot2	6	Robot2
Group 3	Robot3	$PwdRobot3	6	Robot3
Group 4	Robot4	$PwdRobot4	6	Robot4
Group 5	Robot5	$PwdRobot5	6	Robot5
Group 6	Robot6	$PwdRobot6	6	Robot6
Group 7	Robot7	$PwdRobot7	6	Robot7
Group 8	Robot8	$PwdRobot8	6	Robot8
Group 9	Robot9	$PwdRobot9	6	Robot9
Group 10	Robot10	$PwdRobot10	6	Robot10
Group 1	Haiti1	$PwdHaiti1	6	Haiti1
Group 2	Haiti2	$PwdHaiti2	6	Haiti2
Group 3	Haiti3	$PwdHaiti3	6	Haiti3
Group 4	Haiti4	$PwdHaiti4	6	Haiti4
Group 5	Haiti5	$PwdHaiti5	6	Haiti5
Group 6	Haiti6	$PwdHaiti6	6	Haiti6
Group 7	Haiti7	$PwdHaiti7	6	Haiti7
Group 8	Haiti8	$PwdHaiti8	6	Haiti8
Group 9	Haiti9	$PwdHaiti9	6	Haiti9
Group 10	Haiti10	$PwdHaiti10	6	Haiti10

TEACHER CREDENTIALS

FirstName	LastName	UserName	Password	Email
Teacher	A	TeacherBnG	1Teacher!	power54@gmail.com