



SAMPLE MISSIONS PACK

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WELCOME TO STEM HEROES ACADEMY!

At STEM Heroes Academy, kids don't just learn STEM—they **live it** through hands-on **missions** that challenge them to **think, create, and solve real-world problems** using coding, robotics, science, and digital media.

This **Sample Missions Pack** gives you a firsthand look at how our **unique mission-based learning approach** works. Instead of traditional classes, students take on exciting challenges, **applying STEM skills to real scenarios** just like engineers, scientists, and innovators do in the real world.

💡 Inside this pack, you'll find:

- **Meet the STEM Heroes** – Get to know Luqman, Bilal, Bushra, Musa, and Gulnaz—the young innovators leading the way!
- **A Comic Strip** – Before diving into the missions, start with the comic strip! It sets the stage for the challenge our STEM Heroes will face. See our heroes in action as they take on a mission to rebuild a flood-stricken village.
- **3 Sample Missions** – Each mission includes a detailed brief, learning objectives, and problem-solving challenges that make STEM education come alive!
 - **Operation Restore [Coding Mission]** – Code a task management app to help rebuild Riverwood Village.
 - **Operation Voices [Animation Mission]** – Create animated media to raise awareness for disaster recovery.
 - **Operation ClearPath [Robotics Mission]** – Build and program a robot to clear debris and assist in rescue efforts.

MEET OUR STEM HEROES

At STEM Heroes Academy, students are guided by **five legendary STEM Heroes**, each representing a key STEM discipline. These heroes **inspire, mentor, and challenge** young innovators to **think critically, build creatively, and solve real-world problems**.

LUQMAN - THE LOGIC LEADER

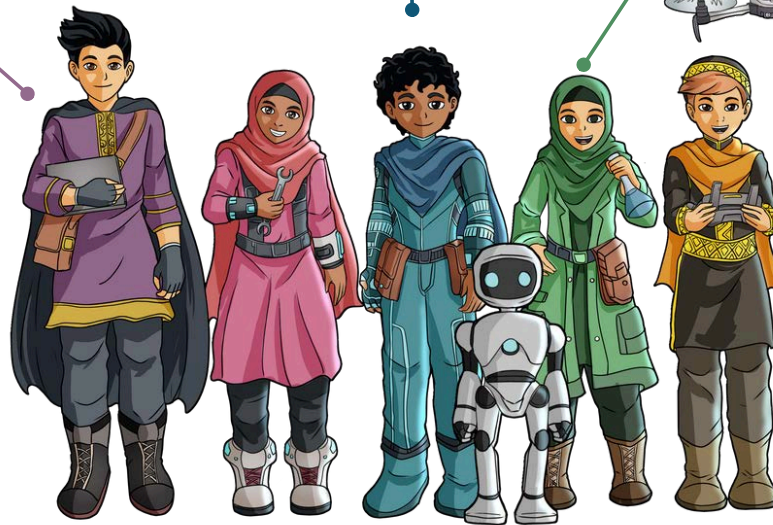
Luqman Combines the power of programming and logic, coding solutions in seconds and creating algorithms that crack any challenge

BILAL - THE BOT BUILDER

Bilal designs and controls a fleet of versatile robots, programming them to perform a wide range of tasks, from building to assisting on missions.

BUSHRA - THE BIO BENDER

Bushra purifies water, creates biodegradable materials, and accelerates plant growth using her scientific knowledge.



GULNAZ - THE GADGET GENIUS

Gulnaz can craft high-tech gadgets from any materials at hand, swiftly designing and building innovative solutions with precision and creativity.

MUSA - THE MEDIA MAGICIAN

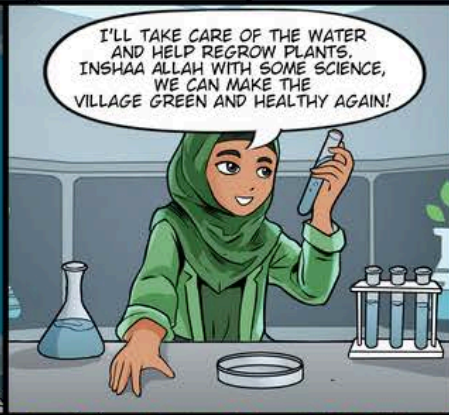
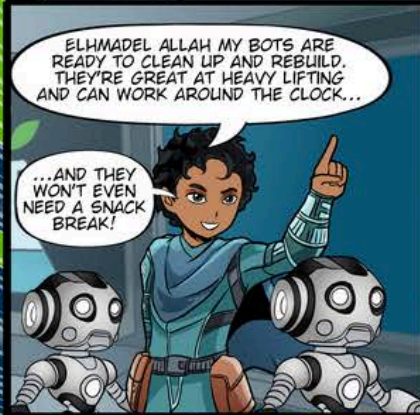
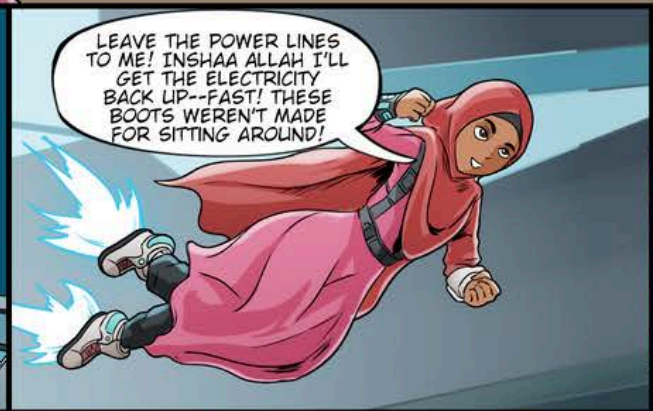
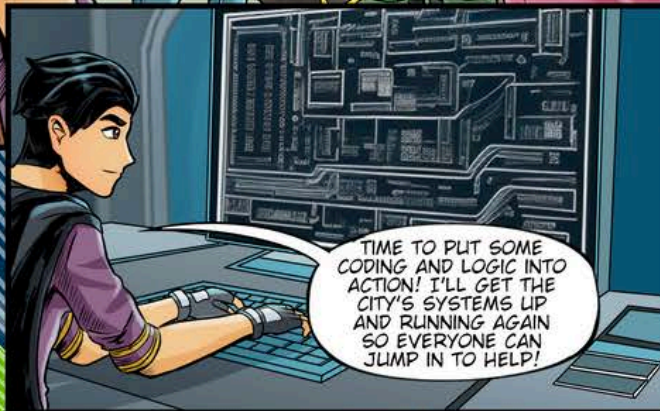
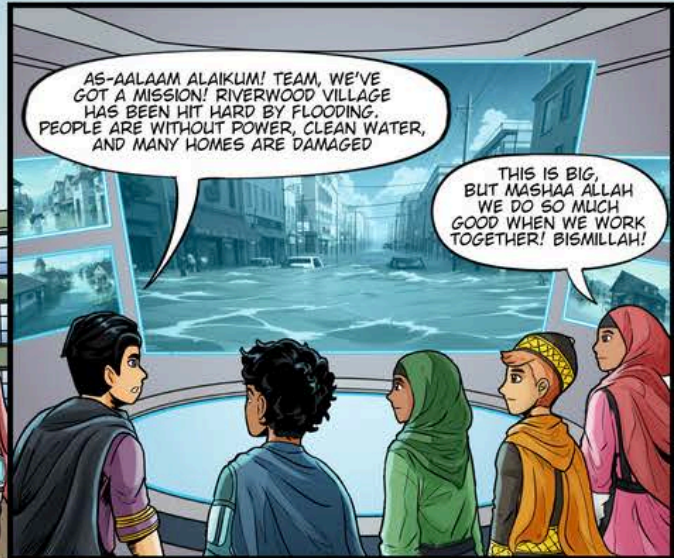
Musa is a master of storytelling and media, using his drones and cameras, he crafts compelling stories designed to go viral, educating and influencing people.

JOIN THE STEM HEROES ON THEIR NEXT MISSION!

Now that you've met **Luqman, Gulnaz, Bilal, Bushra, and Musa**, it's time to see them in action! In every mission, they use their unique STEM skills to solve real-world challenges—just like the students at **STEM Heroes Academy**.

In the comic on the next page, our heroes face **a new mission: Save Riverwood Village**.

STEM MISSION 47: SAVE RIVERWOOD VILLAGE

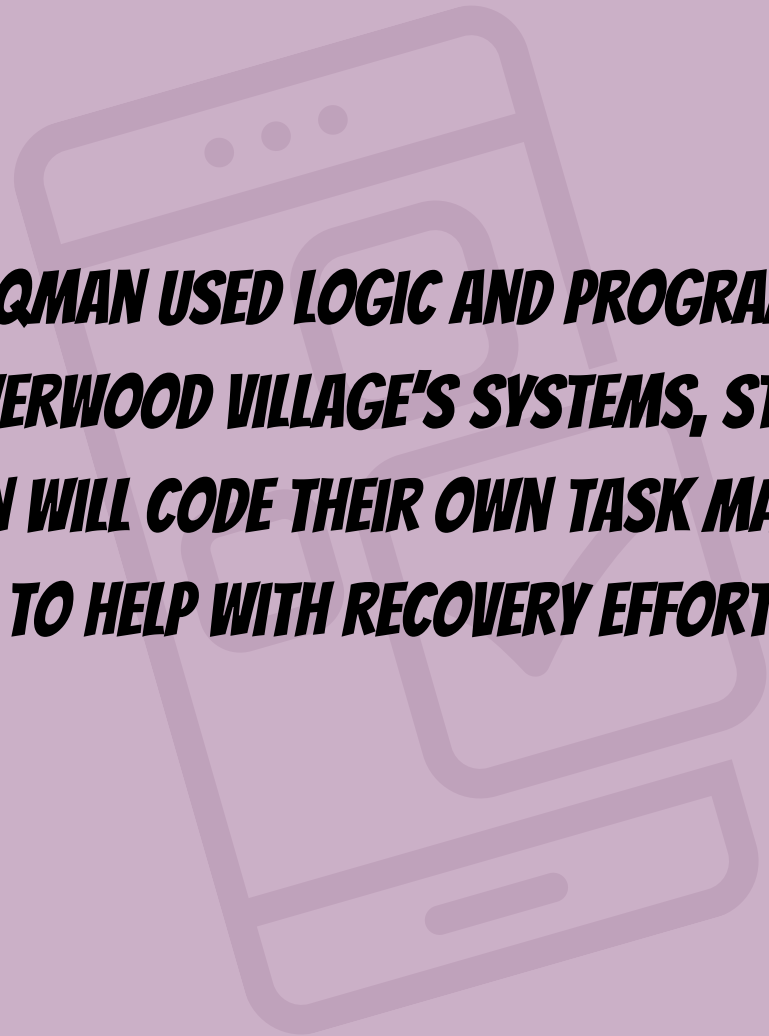




CODING MISSION

OPERATION RESTORE

JUST LIKE LUQMAN USED LOGIC AND PROGRAMMING TO RESTORE RIVERWOOD VILLAGE'S SYSTEMS, STUDENTS IN THIS MISSION WILL CODE THEIR OWN TASK MANAGEMENT APP TO HELP WITH RECOVERY EFFORTS.





CODING MISSION

OPERATION RESTORE

PARENTS AND TEACHERS INFORMATION

TO FINISH THIS MISSION, STUDENTS NEED TO:

- **Understand the fundamentals of programming logic and data structures by creating a task management system.**
- **Learn how to implement functions for adding, removing, and updating tasks using variables and conditionals.**
- **Develop problem-solving skills by debugging errors and optimizing code efficiency.**
- **Strengthen computational thinking by designing an interactive and user-friendly to-do list interface.**
- **Enhance creativity by customizing the TaskBot with additional features like priority levels and deadlines.**
- **Foster resilience and perseverance through iterative testing and improvements.**

OPERATION RESTORE

STEM HERO MISSION BRIEF

LUQMAN, WE'VE CLEARED SOME OF THE DEBRIS, AND PEOPLE ARE STARTING TO RETURN TO RIVERWOOD. BUT THERE'S SO MUCH TO DO! ROADS NEED FIXING, POWER NEEDS RESTORING, AND FOOD DELIVERIES NEED ORGANIZING. I CAN'T KEEP TRACK OF IT ALL!

THAT'S A REAL PROBLEM, BILAL. IF WE DON'T HAVE A SYSTEM TO MANAGE EVERYTHING, WE'LL WASTE TIME AND RESOURCES. WHAT IF I BUILD US A TO-DO LIST APP TO TRACK EVERY TASK?

A TO-DO LIST? WILL THAT REALLY HELP?

ABSOLUTELY! WE CAN LIST ALL THE RECOVERY TASKS, ASSIGN PRIORITIES, AND EVEN MARK THEM WHEN THEY'RE COMPLETED. NO MORE FORGETTING IMPORTANT REPAIRS OR WASTING TIME FIGURING OUT WHAT TO DO NEXT!

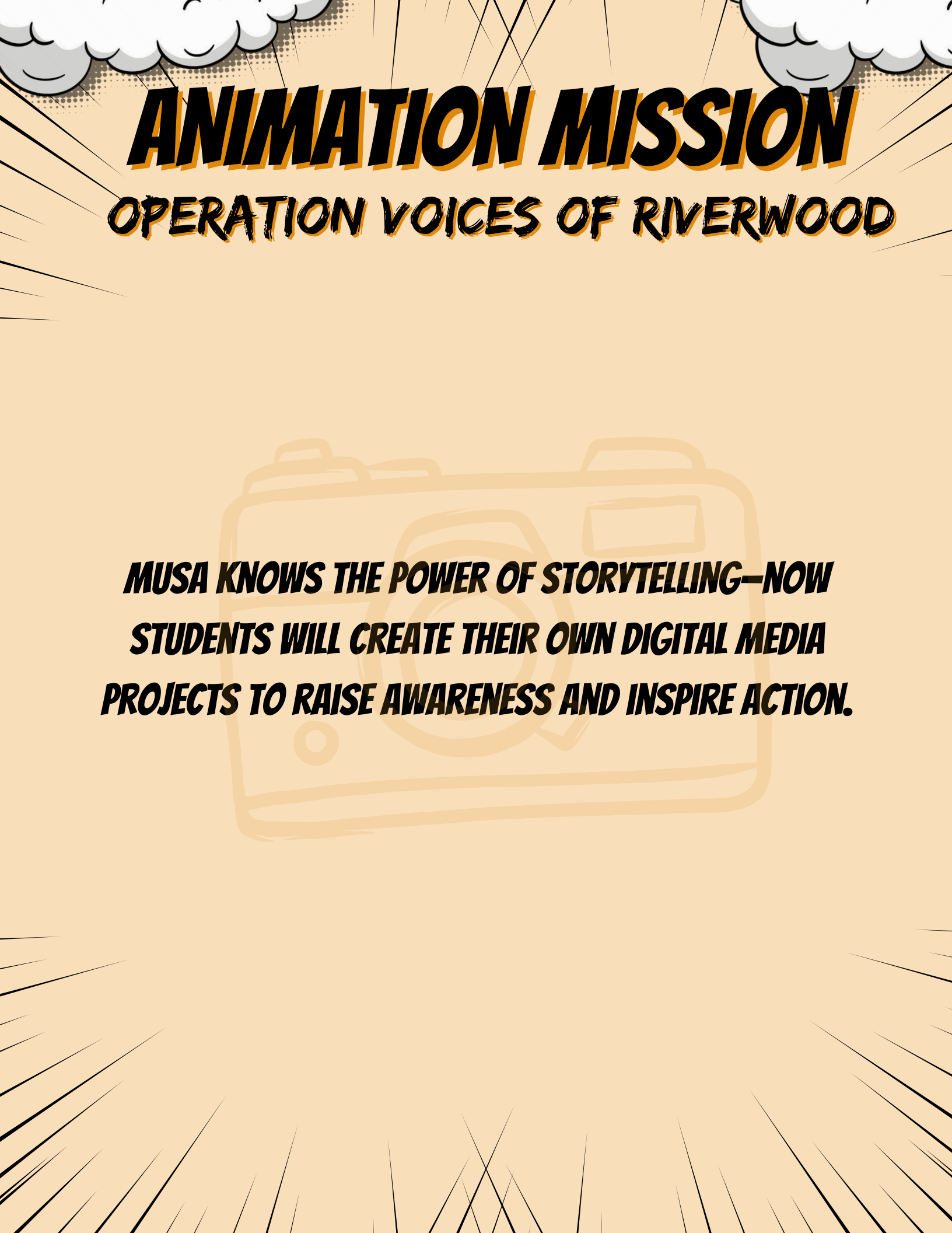
THAT SOUNDS EXACTLY LIKE WHAT WE NEED! BUT WILL IT BE EASY TO USE? I DON'T WANT THE VOLUNTEERS STRUGGLING WITH SOMETHING COMPLICATED.

I'LL DESIGN IT TO BE SIMPLE AND INTUITIVE. ADD A TASK, MARK IT DONE, AND MOVE ON. PLUS, I CAN INCLUDE FEATURES TO ASSIGN TASKS TO DIFFERENT TEAMS, SO WE KNOW WHO'S WORKING ON WHAT

LUQMAN, YOU'RE A GENIUS! IF THIS WORKS, RIVERWOOD WILL BE BACK ON ITS FEET IN NO TIME. LET'S GET CODING!

MISSION OBJECTIVE:

Build and program a To-Do List App to track and organize all tasks needed to restore Riverwood Village. From small repairs to major system restorations, your app will help the heroes coordinate their efforts efficiently. Can you rise to the challenge and become the Code Commander who helps bring Riverwood back to life? The mission begins now!



ANIMATION MISSION

OPERATION VOICES OF RIVERWOOD



***MUSA KNOWS THE POWER OF STORYTELLING—NOW
STUDENTS WILL CREATE THEIR OWN DIGITAL MEDIA
PROJECTS TO RAISE AWARENESS AND INSPIRE ACTION.***

ANIMATION MISSION

OPERATION VOICES OF RIVERWOOD

PARENTS AND TEACHERS INFORMATION



TO FINISH THIS MISSION, STUDENTS NEED TO:

- **Master Animation Fundamentals** – Learn how to create 2D objects, take pictures, and create smooth transitions.
- **Raise Awareness Through Storytelling** – Use animation to highlight real-world challenges and inspire change.
- **Enhance Creativity** – Experiment with character movements, backgrounds, and visual effects.
- **Problem-Solving & Debugging** – Troubleshoot animation glitches and refine movement sequences.
- **Deliver an Impactful Message** – Create an animated short film or interactive scene that educates and empowers viewers.

OPERATION VOICES OF RIVERWOOD

STEM HERO MISSION BRIEF



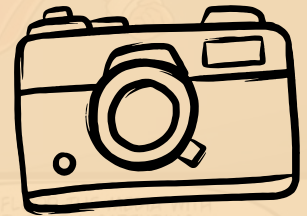
EMERGENCY BROADCAST TO ALL HEROES...



HEROES OF RIVERWOOD, WE NEED YOUR HELP! OUR VILLAGE HAS BEEN DEVASTATED BY THE FLOOD, AND WHILE TEAMS ARE WORKING TO CLEAN UP AND RESTORE THE CITY, MANY PEOPLE STILL DON'T KNOW HOW BAD THINGS REALLY ARE OR HOW THEY CAN HELP.

WE NEED TO TELL RIVERWOOD'S STORY. NOT JUST WITH WORDS, BUT WITH POWERFUL ANIMATIONS THAT CAN INSPIRE, INFORM, AND RALLY SUPPORT. THAT'S WHERE YOU COME IN.

YOUR MISSION IS TO CREATE AN ANIMATED VIDEO THAT SHOWS THE WORLD WHAT RIVERWOOD HAS BEEN THROUGH AND HOW WE CAN REBUILD IT TOGETHER. WE NEED TO CAPTURE THE STRENGTH OF THE SURVIVORS, THE CHALLENGES WE FACE, AND THE HOPE THAT DRIVES US FORWARD.



WITH THE RIGHT VISUALS, WE CAN SPREAD AWARENESS, ATTRACT VOLUNTEERS, AND ENCOURAGE DONATIONS. EVERY FRAME, EVERY MOVEMENT, AND EVERY SCENE YOU CODE WILL MAKE A DIFFERENCE."

SO, ARE YOU READY TO TAKE ON THIS MISSION? WILL YOU USE YOUR ANIMATION SKILLS TO GIVE RIVERWOOD A VOICE? IF SO, GRAB YOUR TOOLS, POWER UP YOUR CREATIVITY, AND LET'S BRING THIS STORY TO LIFE!

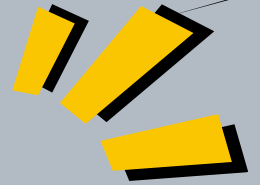


MISSION OBJECTIVE:

Work with Musa the Media Magician to create a compelling animated video that raises awareness about Riverwood Village's struggles and recovery efforts. Your animations will educate, inspire action, and help rebuild the future. The mission begins now!

ROBOTICS MISSION

OPERATION CLEARPATH



***BILAL'S ROBOTS HELPED REBUILD THE VILLAGE—NOW IT'S
TIME TO PROGRAM A ROBOT THAT CAN ASSIST IN REAL-
WORLD DISASTER RESPONSE!***

ROBOTICS MISSION

OPERATION CLEARPATH

PARENTS AND TEACHERS INFORMATION



TO FINISH THIS MISSION, STUDENTS NEED TO:

- **Develop foundational skills in robotics by building simple robots and learning basics of sequential programming of autonomous robots.**
- **Enhance problem-solving abilities by overcoming real-world challenges inspired by Mars exploration.**
- **Apply engineering design principles to create efficient and adaptable robotic solutions.**
- **Strengthen teamwork and collaboration by working together to complete mission objectives.**
- **Cultivate critical thinking and creativity while tackling dynamic, scenario-based tasks.**
- **Gain an understanding of planetary exploration and the challenges faced by space engineers.**
- **Foster perseverance and resilience through iterative testing and debugging of robotic designs.**

OPERATION CLEARPATH

STEM HERO MISSION BRIEF

INCOMING DISTRESS SIGNAL FROM HEROES HQ

THIS IS AN EMERGENCY BROADCAST TO ALL AVAILABLE HEROES! THE FLOODWATERS HAVE RECEDED, BUT RIVERWOOD VILLAGE IS STILL IN RUINS. STREETS ARE BLOCKED WITH DEBRIS, WATER SOURCES ARE CONTAMINATED, AND DANGEROUS OBSTACLES PREVENT RECOVERY TEAMS FROM REACHING CRITICAL AREAS. WE CAN'T RESTORE RIVERWOOD UNTIL THE PATHWAYS ARE CLEARED!

WE NEED A SPECIALIZED CLEANUP ROBOT FAST. A MACHINE THAT CAN NAVIGATE THROUGH THE WRECKAGE, REMOVE DEBRIS, AND COLLECT SAMPLES TO ASSESS ENVIRONMENTAL DAMAGE. THE FATE OF RIVERWOOD'S RECOVERY DEPENDS ON IT.

YOUR MISSION: DESIGN, BUILD, AND PROGRAM THE CLEARPATH BOT WHICH IS A ROBOT CAPABLE OF CLEARING DEBRIS, DETECTING HAZARDS, AND ASSISTING IN THE CLEANUP OPERATION. IT MUST BE STURDY, INTELLIGENT, AND EFFICIENT. RIVERWOOD IS COUNTING ON YOU!

THE CHALLENGE WON'T BE EASY UNPREDICTABLE TERRAIN, HEAVY WRECKAGE, AND UNSTABLE STRUCTURES STANDING IN YOUR WAY. BUT WE KNOW THAT IF ANYONE CAN RISE TO THIS CHALLENGE, IT'S YOU... THE STEM HEROES

DO YOU ACCEPT THIS MISSION? TIME IS RUNNING OUT. WE NEED CLEARPATH BOTS ON THE GROUND—NOW!

MISSION OBJECTIVE:

Build and program the ClearPath Bot to navigate Riverwood's wreckage, clear debris, and collect samples for environmental assessment. Only with your engineering and coding skills can we restore the village. The mission begins now!