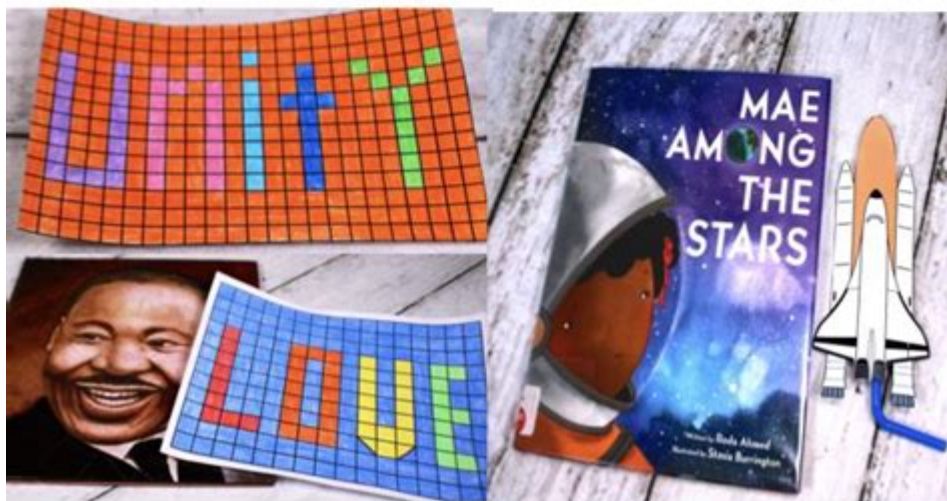


# Black History Month Stem Activities



## Black History Month STEM

carly and Adam



**BLACK HISTORY MONTH STEM ACTIVITIES** ARE AN ESSENTIAL WAY TO CELEBRATE THE CONTRIBUTIONS OF BLACK SCIENTISTS, ENGINEERS, MATHEMATICIANS, AND INNOVATORS THROUGHOUT HISTORY. THIS MONTH-LONG OBSERVANCE ENCOURAGES EDUCATIONAL INSTITUTIONS AND COMMUNITY ORGANIZATIONS TO ENGAGE STUDENTS IN MEANINGFUL ACTIVITIES THAT HIGHLIGHT THE ACCOMPLISHMENTS OF BLACK INDIVIDUALS IN STEM (SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS). BY INTEGRATING BLACK HISTORY WITH STEM EDUCATION, WE NOT ONLY HONOR THESE PIONEERS BUT ALSO INSPIRE FUTURE GENERATIONS TO PURSUE CAREERS IN THESE FIELDS. THIS ARTICLE OUTLINES VARIOUS ACTIVITIES TO CELEBRATE BLACK HISTORY MONTH THROUGH STEM LESSONS, PROJECTS, AND DISCUSSIONS.

# UNDERSTANDING THE IMPORTANCE OF BLACK HISTORY MONTH IN STEM

BLACK HISTORY MONTH, CELEBRATED EVERY FEBRUARY IN THE UNITED STATES, SERVES AS A TIME TO REFLECT ON THE HISTORICAL AND CONTEMPORARY CONTRIBUTIONS OF BLACK INDIVIDUALS. IN THE REALM OF STEM, THE RECOGNITION OF THESE CONTRIBUTIONS IS PARTICULARLY CRUCIAL. DESPITE SIGNIFICANT ACHIEVEMENTS, MANY BLACK FIGURES IN STEM HAVE HISTORICALLY BEEN OVERLOOKED IN MAINSTREAM NARRATIVES.

BY FOCUSING ON STEM ACTIVITIES DURING BLACK HISTORY MONTH, EDUCATORS CAN:

- ENCOURAGE DIVERSITY IN STEM FIELDS.
- PROVIDE ROLE MODELS FOR UNDERREPRESENTED STUDENTS.
- FOSTER DISCUSSIONS ON THE IMPACT OF SYSTEMIC BARRIERS IN EDUCATION AND WORKFORCE.
- INSPIRE CREATIVITY AND INNOVATION THROUGH HISTORICAL CONTEXT.

## ENGAGING STEM ACTIVITIES FOR BLACK HISTORY MONTH

IN THIS SECTION, WE WILL EXPLORE VARIOUS ENGAGING STEM ACTIVITIES SUITABLE FOR DIFFERENT AGE GROUPS. EACH ACTIVITY AIMS TO INTEGRATE LEARNING ABOUT NOTABLE BLACK FIGURES IN STEM WITH HANDS-ON EXPERIENCES THAT EMPHASIZE CREATIVITY AND CRITICAL THINKING.

### 1. RESEARCH PROJECTS ON BLACK STEM PIONEERS

STUDENTS CAN CHOOSE A NOTABLE BLACK FIGURE FROM STEM HISTORY AND CONDUCT A RESEARCH PROJECT. THIS ACTIVITY CAN INVOLVE:

- SELECTING A PIONEER: ENCOURAGE STUDENTS TO CHOOSE FROM SCIENTISTS, MATHEMATICIANS, INVENTORS, OR ENGINEERS SUCH AS KATHERINE JOHNSON, GEORGE WASHINGTON CARVER, OR MAE JEMISON.
- CREATING A PRESENTATION: STUDENTS CAN CREATE A POWERPOINT PRESENTATION, POSTER, OR VIDEO SUMMARIZING THEIR CHOSEN PIONEER'S LIFE, CONTRIBUTIONS, AND IMPACT ON SOCIETY.
- CLASS DISCUSSION: AFTER PRESENTATIONS, HOLD A DISCUSSION ABOUT THE CHALLENGES THESE PIONEERS FACED AND HOW THEIR WORK CONTINUES TO INFLUENCE MODERN STEM FIELDS.

### 2. STEM CHALLENGES INSPIRED BY BLACK INVENTORS

ORGANIZING STEM CHALLENGES CAN BE A FUN WAY TO CELEBRATE INNOVATION. HERE ARE SOME IDEAS:

- BRIDGE BUILDING CHALLENGE: INSPIRED BY THE WORK OF BLACK ENGINEERS LIKE JAMES E. WEST, STUDENTS CAN DESIGN AND BUILD BRIDGES USING EVERYDAY MATERIALS. EVALUATE THE BRIDGES BASED ON STRENGTH AND CREATIVITY.
- INVENTION CONVENTION: INSPIRED BY INVENTORS SUCH AS GRANVILLE T. WOODS OR PATRICIA BATH, STUDENTS CAN CREATE THEIR OWN INVENTIONS TO SOLVE A MODERN-DAY PROBLEM. PROVIDE A PLATFORM FOR THEM TO SHOWCASE THEIR INVENTIONS TO CLASSMATES.
- CODING ACTIVITY: INTRODUCE STUDENTS TO CODING THROUGH GAMES OR PROJECTS THAT PAY HOMAGE TO BLACK TECH INNOVATORS SUCH AS KIMBERLY BRYANT, FOUNDER OF BLACK GIRLS CODE. STUDENTS CAN CREATE SIMPLE CODING PROJECTS OR GAMES THAT REFLECT THEIR LEARNING.

### 3. EXPERIMENTS INSPIRED BY HISTORICAL FIGURES

CONDUCTING EXPERIMENTS THAT REFLECT THE WORK OF BLACK CHEMISTS OR SCIENTISTS CAN HELP STUDENTS UNDERSTAND THE SCIENTIFIC PROCESS WHILE LEARNING ABOUT THEIR CONTRIBUTIONS. CONSIDER THE FOLLOWING:

- **PLANT GROWTH EXPERIMENTS:** INSPIRED BY GEORGE WASHINGTON CARVER'S RESEARCH IN AGRICULTURE, STUDENTS CAN CONDUCT EXPERIMENTS ON HOW DIFFERENT VARIABLES (LIGHT, SOIL TYPE, WATER) AFFECT PLANT GROWTH.
- **CHEMISTRY EXPERIMENTS:** STUDENTS CAN EXPLORE THE CHEMICAL REACTIONS THAT LED TO BREAKTHROUGHS IN MEDICINE, INSPIRED BY ALICE BALL'S WORK ON THE FIRST EFFECTIVE TREATMENT FOR LEPROSY. SIMPLE EXPERIMENTS CAN DEMONSTRATE CHEMICAL REACTIONS AND THEIR PRACTICAL APPLICATIONS.
- **PHYSICS EXPERIMENTS:** RESEARCH THE CONTRIBUTIONS OF BLACK PHYSICISTS LIKE JOHN D. McLoughlin AND ENGAGE STUDENTS IN EXPERIMENTS INVOLVING MOTION, ENERGY, AND FORCES.

## 4. INTERACTIVE STORYTELLING AND STEM INTEGRATION

STORYTELLING IS A POWERFUL EDUCATIONAL TOOL THAT CAN BE WOVEN INTO STEM LESSONS. HERE'S HOW TO INTEGRATE STORYTELLING:

- **BOOKS AND BIOGRAPHIES:** READ BOOKS THAT HIGHLIGHT BLACK FIGURES IN STEM. SOME RECOMMENDED TITLES INCLUDE "HIDDEN FIGURES" BY MARGOT LEE SHETTERLY OR "THE BOY WHO HARNESSSED THE WIND" BY WILLIAM KAMKWAMBA. FOLLOW UP WITH DISCUSSIONS ON THE SCIENTIFIC CONCEPTS PORTRAYED IN THE STORIES.
- **CREATE A STORY:** STUDENTS CAN WRITE THEIR OWN STORIES OR COMIC STRIPS FEATURING A FICTIONAL CHARACTER INSPIRED BY REAL-LIFE BLACK INNOVATORS. THIS COULD INVOLVE THE CHARACTER SOLVING A PROBLEM USING STEM PRINCIPLES.
- **ROLE-PLAYING:** ARRANGE ROLE-PLAYING SESSIONS WHERE STUDENTS ACT OUT HISTORICAL EVENTS RELATED TO BLACK CONTRIBUTIONS IN STEM. THIS CAN HELP DEEPEN THEIR UNDERSTANDING OF THE STRUGGLES AND TRIUMPHS FACED BY THESE FIGURES.

## COMMUNITY ENGAGEMENT AND COLLABORATIVE ACTIVITIES

BEYOND THE CLASSROOM, COMMUNITY INVOLVEMENT CAN ENHANCE THE IMPACT OF BLACK HISTORY MONTH STEM ACTIVITIES. COLLABORATING WITH LOCAL ORGANIZATIONS AND PROFESSIONALS CAN PROVIDE STUDENTS WITH REAL-WORLD CONNECTIONS.

### 1. GUEST SPEAKERS AND WORKSHOPS

INVITE LOCAL BLACK SCIENTISTS, ENGINEERS, OR EDUCATORS TO SPEAK ABOUT THEIR EXPERIENCES AND THE IMPORTANCE OF DIVERSITY IN STEM. WORKSHOPS CAN BE ORGANIZED TO PROVIDE HANDS-ON LEARNING EXPERIENCES IN VARIOUS STEM FIELDS.

### 2. FIELD TRIPS TO STEM EXHIBITS

PLAN FIELD TRIPS TO SCIENCE MUSEUMS, TECHNOLOGY CENTERS, OR UNIVERSITIES THAT CELEBRATE DIVERSITY IN STEM. MANY INSTITUTIONS HOST SPECIAL EVENTS OR EXHIBITS DURING BLACK HISTORY MONTH THAT HIGHLIGHT THE CONTRIBUTIONS OF BLACK INDIVIDUALS IN THE FIELD.

### 3. COMMUNITY STEM FAIRS

ENCOURAGE STUDENTS TO PARTICIPATE IN OR ORGANIZE A COMMUNITY STEM FAIR THAT SHOWCASES PROJECTS INSPIRED BY BLACK INNOVATORS. THIS COULD BE AN OPPORTUNITY FOR STUDENTS TO DEMONSTRATE THEIR LEARNING AND SHARE THEIR PROJECTS WITH THE COMMUNITY.

## CONCLUSION

BLACK HISTORY MONTH STEM ACTIVITIES ARE VITAL IN EDUCATING STUDENTS ABOUT THE SIGNIFICANT CONTRIBUTIONS OF BLACK INDIVIDUALS TO SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS. BY INTEGRATING THESE ACTIVITIES INTO THE CURRICULUM, EDUCATORS CAN INSPIRE A NEW GENERATION OF INNOVATORS AND THINKERS WHILE FOSTERING AN APPRECIATION FOR DIVERSITY IN STEM FIELDS. THE ACTIVITIES OUTLINED ABOVE PROVIDE A FRAMEWORK FOR CELEBRATING BLACK HISTORY WHILE ENGAGING STUDENTS IN HANDS-ON LEARNING EXPERIENCES. AS WE HONOR THE PAST, WE CAN ALSO ENCOURAGE FUTURE LEADERS IN STEM TO DREAM BIG AND BREAK BARRIERS, ULTIMATELY ENRICHING OUR SOCIETY AS A WHOLE.

## FREQUENTLY ASKED QUESTIONS

### WHAT ARE SOME ENGAGING STEM ACTIVITIES FOR BLACK HISTORY MONTH?

SOME ENGAGING STEM ACTIVITIES FOR BLACK HISTORY MONTH INCLUDE BUILDING MODELS OF INVENTIONS BY BLACK SCIENTISTS, CREATING A TIMELINE OF IMPORTANT BLACK FIGURES IN STEM, CONDUCTING EXPERIMENTS INSPIRED BY BLACK RESEARCHERS, AND HOSTING A CODING WORKSHOP THAT HIGHLIGHTS CONTRIBUTIONS FROM BLACK CODERS AND ENGINEERS.

### HOW CAN EDUCATORS INTEGRATE BLACK HISTORY INTO STEM CURRICULA DURING FEBRUARY?

EDUCATORS CAN INTEGRATE BLACK HISTORY INTO STEM CURRICULA BY INCLUDING LESSONS ON NOTABLE BLACK SCIENTISTS AND INVENTORS, DISCUSSING THE IMPACT OF SYSTEMIC BARRIERS IN STEM FIELDS, AND INCORPORATING PROJECTS THAT CELEBRATE THE ACHIEVEMENTS OF BLACK INDIVIDUALS IN SCIENCE, TECHNOLOGY, ENGINEERING, AND MATHEMATICS.

### WHAT RESOURCES ARE AVAILABLE FOR TEACHING BLACK HISTORY THROUGH STEM?

RESOURCES FOR TEACHING BLACK HISTORY THROUGH STEM INCLUDE ONLINE PLATFORMS LIKE STEM.ORG, EDUCATIONAL WEBSITES THAT FOCUS ON BLACK CONTRIBUTIONS TO SCIENCE, AND BOOKS LIKE 'HIDDEN FIGURES' THAT HIGHLIGHT THE WORK OF BLACK WOMEN IN NASA. ADDITIONALLY, ORGANIZATIONS LIKE THE NATIONAL SOCIETY OF BLACK ENGINEERS OFFER EDUCATIONAL MATERIALS AND SUPPORT.

### CAN YOU SUGGEST A STEM PROJECT THAT HONORS A BLACK HISTORICAL FIGURE?

ONE STEM PROJECT THAT HONORS A BLACK HISTORICAL FIGURE IS TO HAVE STUDENTS CREATE A MODEL OF THE TRAFFIC LIGHT, INSPIRED BY GARRETT MORGAN, WHO INVENTED THE THREE-POSITION TRAFFIC SIGNAL. STUDENTS CAN LEARN ABOUT THE SCIENCE BEHIND LIGHT SIGNALS AND TRAFFIC SAFETY WHILE DISCUSSING MORGAN'S CONTRIBUTIONS.

### HOW CAN FAMILIES PARTICIPATE IN STEM ACTIVITIES DURING BLACK HISTORY MONTH?

FAMILIES CAN PARTICIPATE IN STEM ACTIVITIES DURING BLACK HISTORY MONTH BY ENGAGING IN AT-HOME SCIENCE EXPERIMENTS INSPIRED BY BLACK INVENTORS, VISITING LOCAL MUSEUMS WITH EXHIBITS ON BLACK HISTORY IN STEM, OR ATTENDING COMMUNITY EVENTS THAT FOCUS ON CELEBRATING BLACK CONTRIBUTIONS TO SCIENCE AND TECHNOLOGY.

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