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Google Arts and Culture



BBC Civilizations AR



Apps and ideas to help your Gifted Classroom "STEAM"

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Gifted Support Teacher, K - 12



What is STEM?

From the America Society for Engineering Education

STEM

Both private and public sectors report that U.S. schools are not producing enough graduates with the skills we need to continue leading the world in innovation. Our graduates need more rigorous knowledge of math and science, plus the ability to integrate and apply that knowledge to solve many [challenges](#) facing our nation. And they also need a variety of personal attributes and thinking skills.

Our job as K-12 educators is to prepare our students for the world they will enter when they graduate. That's why STEM programs are being established – to equip students with the specific 21st-century knowledge and skills they need. According to a [2014 study](#) by the America Society for Engineering Education, quality STEM programs need to look like this:

What does a quality STEM program need?

From the America Society for Engineering Education

- Engaged in real world problems
- Integrating STEM content in meaningful way
- Inquiry-based learning led by students
- Using engineering design process to work toward solution
- Productive teamwork and communication among students
- Students think critically, creatively, and innovatively

STEM Engineering Process

1. Define Problem
2. Conduct Background research
3. Define criteria and constraints
4. Brainstorm, determine solution, create prototype
5. Build, test, redesign prototype
6. Share results

STEM Scientific Process

1. Ask a question
2. Conduct background research
3. Create a hypothesis or theory
4. Design and conduct experiments to test
5. Analyze data, draw conclusions, troubleshoot, repeat as necessary
6. Share results

What is the A in STEAM?

- Arts
- Creative planning
- Soft skills: data visualization or fine art imagery to deepen understanding of STEM (i.e. infographics)
- Language Arts and Humanities

Future careers in the A in STEAM

From the America Society for Engineering Education

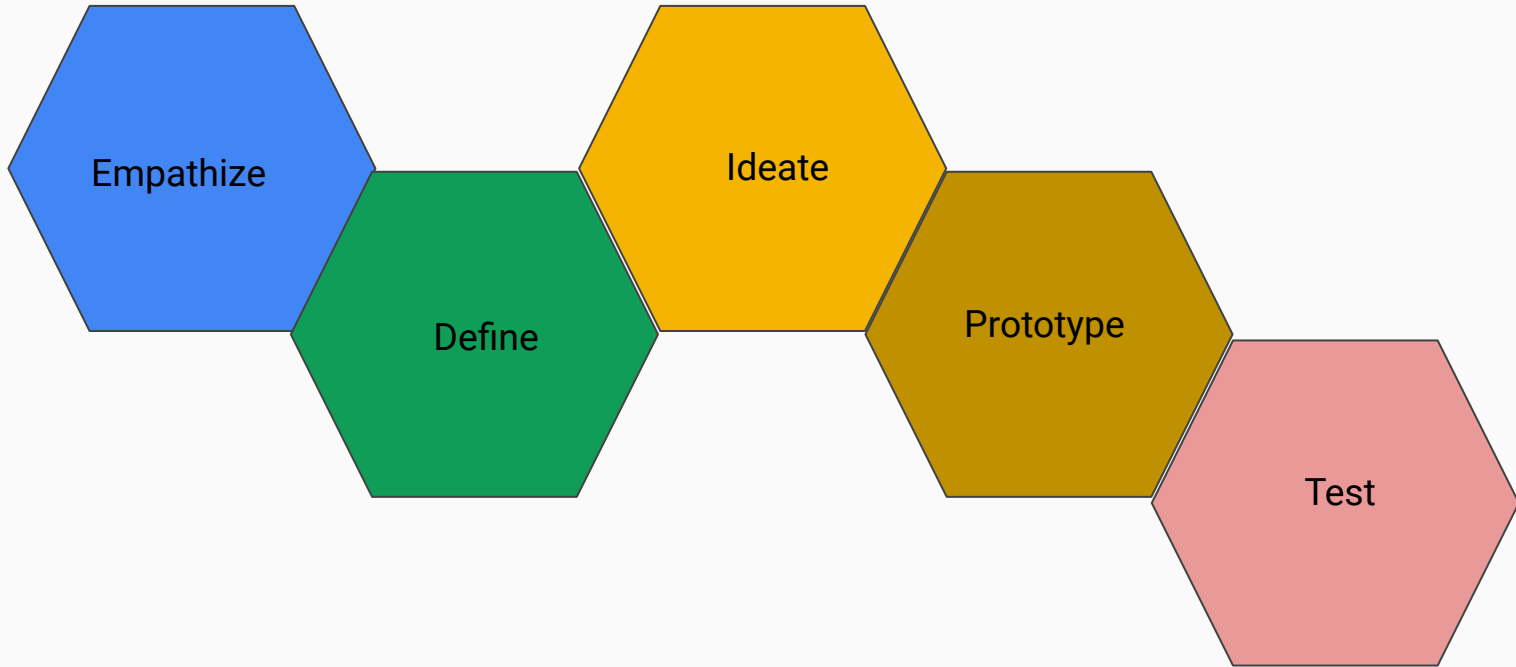
- Architect
- Sound engineer
- Graphic designer
- Conservator
- Product designer
- Urban planner
- Archaeologist

Interesting...

From the America Society for Engineering Education

What Type of Career Can You Have in STEAM?

The Washington Post found that 92 percent of high-level employees in leadership positions, such as chief executives and product engineers, have a bachelor's degree, and 47 percent hold a graduate degree. However, the types of degrees they hold may come as a surprise. Only 37 percent had degrees in engineering or computer technology, while the remaining 63 percent had degrees in a wide range of fields, including business, accounting, health care, and the arts and humanities.



Makerspace

1. Gather what you have, including junk
2. Ask students to contribute
3. Ask families for consumables
4. Talk to your STEM teacher
5. Ask students what they would like to do

Makerspace of Consumables: Junk Art

The Freedoms of the first Amendment

Age of Exploration

Five Pillars of Islam

3-D Printing

Artifacts

Historical buildings/Great Wall of China

Game Pieces

Museum pieces

Designer/Maker/Scientist/Engineer
Mindset in the **Arts/Humanities!**

Ask WHY?

Portals in Time

Why?

Why don't we have a Social Contract (1700) Today

Why not have another Reformation?

Why tax paint and glass?

Why do Representatives serve 2 years and Senators 6 years?

If King George III came to
America

What if...

Humpty Dumpty did fall? What kind
of wall would you have built?

If King George III came to America?
How would you protect him?

If King George III came to
America

Points to Ponder

What was the education system in Germany in the 1920s and 1930s that produced a society to follow Adolf Hitler?

Why didn't both parties have to wear a Scarlet Letter?

If King George III came to
America

Journals Diaries

What would you do if you were a
King?

What would you write about if you
were a writer?

What would you do if you had a
million dollars given to you?

If King George III came to
America

Is it time for
these?

A new religion?

A new language?

Neat Websites Tech and Arts





Movies/TV/Internet
Digital Art

STAR TREK

Star Trek What were episodes highlighting in the cultures of the day?



UFOs Are they real? Image from Britannica

Competitions: **Art** and Prototypes

Patriotic Themes
eCybermission



Patriotic Associations

The largest societies for descendants of American Revolutionary war patriots are the National Society Daughters of the American Revolution (DAR) for women and the National Society Sons of the American Revolution (SAR) for men. Both organizations have chapters in every state, as well as other countries. Search for the closest society to you

Daughters of the American
Revolution

Sons of the American Revolution

Daughters of the American Revolution

The organization was founded in 1890 with the simple mission of promoting historic preservation, education and patriotism. These timeless, overarching principles keep the DAR strong and vitally relevant in this ever-changing world.

This nonprofit, nonpolitical volunteer women's service organization dedicated to promoting patriotism, preserving American history and securing America's future through better education consists of over 190,000 members in 3,000 chapters across the world. These vibrant, active women are the heart of the organization.

Junior American Citizens - Many competitions to choose from, see next slide (Pre-K to Grade 12)

American History Essay Contest (Grades 5 - 8)

Patriots of the American Revolution Essay Contest (Grades 5 - 12)

Good Citizen E



Daughters of the American Revolution (DAR)

Junior American Citizens (JAC)

2023 - 2024 Theme: "Sparkling in the Stars with
tle



This contest is open to all students in public, private, parochial, and sanctioned home schools in grades preschool through 12. Youth groups such as scout troops and service organizations may also participate

JAC Categories of Competition

Art contest, five categories:

- Poster
- Banner
- Stamp
- Photographic Essay
- Digital Art



Creative Expression

Contest, three categories:

- Poetry
- Short Story
- Graphic Novel/Comic

U.S.S. Constitution

USS *Constitution* is “America’s Ship of State.” This designation honors 225 years of service as a global ambassador representing the United States as a symbol of democracy and freedom around the world. Imagine if *you* were designated an ambassador role, like a “Ship of State.” What would your mission be, and how could you live that out? Describe how you would represent the very best of our country’s ideals in your community. (Grades 9 - 12)





eCybermission

The Basics



Each team needs:

2-4 students

An adult Team Advisor

A community problem to explore or try to solve

Grades 6 - 9

Teams choose one of two paths:

Science – Asking a question/exploring a problem

Engineering – Solving a problem

Timeline

August 15, 2022

Student Registration Opens

Team Advisor Registration Opens

September 14, 2022

Mini-Grant Application 'Early Dispersal' Deadline

November 21, 2022 Mini-Grant Team Registration Closes

February 22, 2023 at 12 noon ET

Team Registration Closes

Team Advisor Registration Closes

March 14, 2023

Mission Folder Submission Deadline

March 15 - March 29, 2023

Virtual Judging

April 24 - April 28, 2023

Regional Judging

May 5, 2023

State Winners, Regional Finalists & National Finalists Announced

June 26 - June 29, 2023

National Judging & Educational Event



Expert Advice

All teams have access to our volunteer STEM professionals for support and help along the way through CyberGuide Live Chats and the Message Board.



Feedback

All eCYBERMISSION submissions are judged and given written feedback.



Awards

Top teams in each grade are awarded prizes on a state, regional, and national level.

Mission Folder

Team Collaboration

Engineering/Scientific Experiment Design

Design Development

Drawing Conclusions

Community Benefit



STEM

Students employ the same practices as scientists and engineers and use technology and math along the way.



Virtual

Student projects are submitted and reviewed completely online.



Community

Students learn how to engage with their communities and work to identify and/or solve local problems.

List of Patriotic Competitions and eCybermission

[Junior American Citizen \(JAC\) Contest Categories, DAR](#)

[DAR Essay Contest](#)

[DAR Good Citizenship Award](#)

[Sons of the American Revolution Contests](#)

[The American Legion Oratorical Contest](#)

[American Legion Auxiliary Contests](#)

[Veterans of Foreign Wars Contests](#)

[USS Constitution Essay Contest](#)

[eCybermission](#)

All images in this presentation were taken from their respective website

Helpful Resources for you:

[ISTE Standards for Students](#)

[Must have for a STEM Lab](#)

[Six Characteristics of a great STEM lesson](#)

[Primer for STEM Education](#)

[US Department of Education: STEM](#)

[Vivify STEM](#)

[Hour of Code](#)

[20 Great STEAM Websites for Young Learners](#)