



American Girls, STEM, and the Space Race

Document-Based Question (DBQ) Lesson Plan

This DBQ is modeled on resources from “The DBQ Project,” <https://www.dbqproject.com/>. It can be paired with Girl Museum's *STEM Girls* and *STEAM Girls* exhibitions and accompanying Educational Guides. Visit www.girlmuseum.org for more information.

The following pages include the steps and activities needed to complete this DBQ. It is designed for teachers to print the appropriate pages for students and retain pages applicable only to teachers.

The amount of time it will take students to complete these tasks and the DBQ will vary depending on students’ skill level, grade, and experience in analyzing documents.

Proposed Schedule

1 Day (45-60 Minutes)

- **Step One: Get Students Interested**

Complete one of the Hook Exercises. Read the directions aloud and then have students work individually or in pairs to answer the questions. Come back together and briefly discuss. This activity is meant to get students interested in the DBQ.

- **Step Two: Establishing Background**

Have students read the “Background Essay” together as a class, in pairs, or individually. If you would like, have the students watch a short clip of the “Duck and Cover” video (it is easily accessible on YouTube). Students can either answer the Background Essay Questions in writing or simply discuss the questions as a class.

- **Step Three: Understanding the Question and Pre-Organizing**

Ensure that students understand the assignment and are on the right track by doing these activities together as a class. Students can work individually to start, but it is recommended that some of the pre-organizing brainstorming be done as a class using the board.

2 Days (90 Minutes)

- **Step Four: Introducing the Documents and Document Analysis**

With the whole class, read and analyze Document A and set expectations for students' work. Students can then work in pairs or groups of three as they examine the documents and write answers to the Document Analysis questions. Toward the end of class, you might show the students the actual girls' letters to John Glenn and explain that excerpts from the letters are transcribed in this DBQ for students' convenience. Using these letters, you can ensure that students understand the difference between primary and secondary sources.

1-2 Days (45-90 Minutes)

- **Step Five: Getting Ready to Write**

Students complete Steps One and Two of the "Getting Ready to Write" exercises. After working individually, have students test out their theses by discussing them with their peers and have their thoughts affirmed or refuted.

*"Step Three: Outlining Your Essay" of the "Getting Ready to Write" exercises is optional but recommended for students who need extra support.**

1 Day (45-90 Minutes)

- **Step Six: Essay Writing Workshop**

Students do an in-class Writing Workshop to complete their essays.

How Did the Cold War Shape American Girls' STEM Education?

Overview: Between the 1940s and 1990s, the U.S. and the U.S.S.R. competed for dominance on the world stage in the Cold War. This conflict profoundly shaped the lives of these countries' girls, especially their education. This DBQ looks specifically at how the Cold War Space Race shaped American girls' STEM education.

Documents:

Document A: Steven Mintz, *Huck's Raft: A History of American Childhood*

Document B: Amy Sue Bix, "Engineering Girls: The Evolution of Advocacy for Young Women's STEM Education"

Document C: National Defense Education Act

Document D: Photo of Penelope Jo Marsons [Maddy]

Document E: Letters to *Seventeen Magazine*

Document F: Girls' Letters to John Glenn (School)

Document G: Girls' Letters to John Glenn (Aspirations)

Document H: Table: Women Majoring in Science and Engineering

Hook Exercise: Wally Funk

In 1961, twenty-two-year-old Wally Funk wanted to be an astronaut. Just like John Glenn, the first American who orbited Earth, she endured an isolation test in order to prove that she could do it. She sat in a sensory-deprivation tank of water for 10 hours and 35 minutes. While she passed this exam and applied to be an astronaut for NASA four times, she never achieved her dream...until July 2021 when Jeff Bezos invited her to join the Mercury 13 space program.¹

Directions: Watch the following video and discuss the questions that follow with a partner. Video link:

<https://www.youtube.com/watch?v=IDyakSKpBmU>



Discussion Questions

- What do you think stopped Wally Funk from going to space sixty years ago?
- What do you think changed between 1961 and 2021 that enabled Wally Funk to go to space?

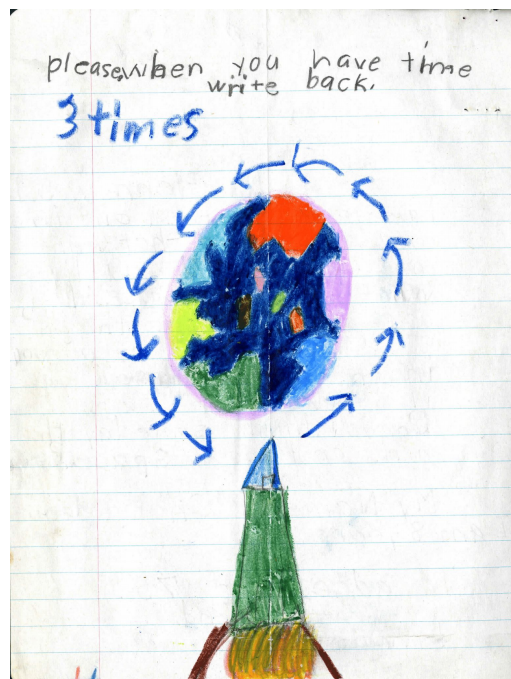
¹ Marina Koren, "Guess Who's Going to Space with Jeff Bezos?" *The Atlantic*, July 1, 2021, <https://www.theatlantic.com/science/archive/2021/07/jeff-bezos-wally-funk-blue-origin/619344/>; and Theresa Machemer, "Trailblazing Pilot Wally Funk Will Go to Space 60 Years After Passing Her Astronaut Tests," *Smithsonian Magazine*, <https://www.smithsonianmag.com/smart-news/wally-funk-trailblazing-pilot-will-go-space-60-years-after-passing-astronaut-tests-180978108/>.

Hook Exercise: Cheryl's Account of the Space Race²

Mr. Glenn went around the world three times. And He was in a capsule. If the Russians were lieing, Mr. Glenn would have been the first one in the wole world that went into space. Did you like what you saw in space? Did you see a lot of things? I saw the picture of you in the paper. I saw you in your silver suit. Do you think someday that girls could goin space?

My Name is Cheryl D. [redacted]
I am 8 years old.

My address is [redacted]
Gary Ind.



Discussion Questions

1. Why do you think Cheryl mentioned the Russians in her letter?
2. How do you think Cheryl felt about the idea of girls traveling to space?

² Cheryl to John Glenn, [undated], 1962, Box 26, Folder 7, The Ohio State University Archives, The John Glenn Archives, Record Group 57/a-1, Non-Senate Papers Sub-group, NASA Series, Mercury 7 Sub-series.

Background Essay: **What did STEM education have to do with the Cold War?**

The Events: Sputnik I and the Space Race

On October 4, 1957, the U.S.S.R. (or Soviet Union) launched the world's first artificial satellite--Sputnik I--and it orbited earth for about 98 minutes. The whole world watched in awe. In the U.S., American politicians, military strategists, and scientists worried about what Sputnik meant for the country's national security. *Would the U.S.S.R. be able to spy on the U.S. from space? What other technology was the U.S.S.R. developing? Would they be able to attack U.S. soil?*

The launch of Sputnik ushered in the beginning of a **Space Race** between the U.S. and the Soviet Union. Feeling that they were losing the race, the U.S. quickly invested in its own space program and the fields of science and technology. Sharing in the U.S. government's concern about the country's national security, much of the American public--adults, teenagers, and children alike--became enraptured with all things space, science, and technology in the following decade. This included American girls who penned hundreds of thousands of letters to magazines and public figures, such as prominent scientists and astronauts, to express their interest in **STEM**-related topics.

The Backstory: Cold War Kids

Prior to the mid-twentieth century, it would have been unlikely to find many girls inquiring about science and technology. In the Western world, including the U.S., these topics were overwhelmingly typed as masculine pursuits given traditional gender roles that designated women's work to domestic spaces and men's work to public spaces. While adherence to such gender roles can continue to leave girls on the margins of STEM education in the twenty-first century, in the decades following World War II women and girls challenged assumptions about who could--and should--be interested in STEM.³

Two superpowers emerged in the wake of World War II: the United States and the Soviet Union. Though allies during the war, relations between the two countries quickly soured and would remain tense throughout the following decades. Historians generally characterize the fraught relationship between these two countries as a global struggle between two **ideologies**: the United States' **capitalism** and the Soviet Union's

³ See Amy Sue Bix, "Engineering Girls: The Evolution of Advocacy for Young Women's STEM Education," in Susan Eckelmann Berghel, Sara Fieldston, and Paul M. Renfro, eds., *Growing Up America: Youth and Politics Since 1945* (Athens: University of Georgia Press, 2019), 191-210; and Sarah Scripps, "Science Fairs as National Security: Adolescent Culture in Postwar America, 1950-1965," in Berghel et. al, *Growing Up America*, 54-74.

communism. Rather than directly engage in armed combat (hence the term “Cold War”), the two countries sought to prove their dominance in a number of political, material, and cultural arenas.

One of these arenas was technology. At the end of World War II, the U.S. had dropped atomic bombs on Hiroshima and Nagasaki. The bombs destroyed the cities and killed hundreds of thousands of innocent civilians, forever changing the meaning of warfare. Recognizing that advanced technology would be needed to win any future wars, the U.S. and U.S.S.R. tried to prove their technological superiority on the world stage throughout the Cold War. For example, both countries raced to create an intercontinental ballistic missile that would be powerful enough to send a nuclear warhead from one country to the other. In August 1957, the U.S.S.R. beat the U.S. to this accomplishment and, two months later, harnessed the power of the missile in order to launch Sputnik I into space.⁴ Proving one country’s technological superiority now meant not just winning a race to build arms, but to also explore space.

Fears of nuclear war and that the U.S.S.R. was technologically superior were palpable in everyday American life, including that of the country’s children and youth. In schools across the country, the film *Duck and Cover* told schoolchildren what they should do if a nuclear attack was imminent. While American parents, policymakers, and educators wanted to ensure the physical safety of their children, they also fretted that the American education system was not adequately preparing students to scientifically compete on the international stage.

In the early years of the Cold War, Americans had taken pride in their school system. Students chose from a range of courses and extracurricular activities that prepared them for day-to-day living and participated in inquiry-based projects that allowed them to choose what and how they learned. Their education system, Americans argued, was raising a generation of imaginative, self-motivated students prepared for all aspects of life. In contrast, Americans argued that the Soviet system was **autocratic**. Policymakers and teachers chose what and how Soviet school children would learn and their coursework narrowly focused on core main subjects, such as math and science. In contrast to imaginative, self-motivated American students, Americans insisted that Soviet students were growing up to be robot-like; able to follow directions and perform jobs but ill-prepared to handle everyday living.⁵ With the launch of Sputnik, however, Americans started to identify their education system as inadequate. In order to compete

⁴ See Edwin C. Bredeen et al., “The Cold War,” James McKay, ed., in *The American Yawp*, eds. Joseph Locke and Ben Wright (Stanford, CA: Stanford University Press, 2018); and “Launching the Space Age,” Smithsonian National Air and Space Museum, accessed July 10, 2021, <https://airandspace.si.edu/exhibitions/space-race/online/sec200/sec250.htm>.

⁵ Margaret Peacock, *Innocent Weapons: The Soviet and American Politics of Childhood in the Cold War* (Chapel Hill, NC: University of North Carolina Press, 2014), especially Chapter Two.

with the Soviet Union, the American education system needed to be improved if the U.S. was going to prove its scientific superiority.

Despite rhetoric about needing to improve the education of all Americans, boys remained the students Americans had in mind when they spoke of raising a generation ready to compete scientifically on the world stage. While the imagined schoolboy turned scientist was built on pre-Cold War assumptions about “proper” gender roles, it also represented the era’s emphasis on **domesticity**. World War II had severely disrupted family life, and Americans put a premium on family stability following the war. In the minds of many Americans this meant that women should first and foremost be wives and mothers. Nonetheless, women and girls challenged these expectations and eagerly took advantage of the opportunities that Cold War anxieties were creating in STEM fields.

Your Task

After examining the documents that follow, answer the question: *How did the Cold War shape American girls’ STEM education?*

Background Essay Questions

- 1. What was the Cold War?**
- 2. How did World War II shape the Cold War?**
- 3. Why were science and technology important to the Cold War?**
- 4. How did gender shape science before and during the Space Race?**
- 5. How did Americans' attitudes about their education system change with the launch of Sputnik?**
- 6. Define these terms:**

Space Race

STEM

Ideology

Capitalism

Communism

Autocratic

Domesticity

Timeline of the Space Race

September 2, 1945: End of World War II.

October 4, 1957: U.S.S.R. launches Sputnik I, the first artificial satellite to orbit Earth.

1958: U.S. passes the National Aeronautics and Space Act, creating NASA.

1958: U.S. passes National Defense Education Act.

January 2, 1959: U.S.S.R. flies Luna I past the moon, becoming the first spacecraft to leave Earth's orbit.

September 14, 1959: U.S.S.R. lands Luna II on the moon, becoming the first landing on another celestial body.

1960 to 1962: 25 women report to the Lovelace Clinic (U.S.) and train alongside men as future astronauts. They are known as the First Lady Astronaut Trainees (FLATs) and are scheduled for the Mercury 13 mission. However, just days before reporting for intensive training, their training is canceled. Only men advance to become astronauts.

January 31, 1961: Ham, a chimpanzee (U.S.), becomes the first primate in space.

April 12, 1961: Yuri Gagarin (U.S.S.R.) becomes the first human to achieve spaceflight and orbit the Earth. However, Gagarin's flight is entirely controlled from Earth.

May 5, 1961: Alan Shepard (U.S.) is the first to control his flight while in space.

February 20, 1962: John Glenn (U.S.) becomes first American to orbit Earth.

June 16, 1963: Valentina Tereshkova (U.S.S.R.) becomes first woman and first civilian in space. She flew a solo mission and orbited the Earth 48 times over 3 days. As of 2022, she is the only woman to have been on a solo space mission.

July 20, 1969: First landing of humans on the Moon, aboard Apollo 11 (U.S.).

1975: National Science Foundation creates Women in Science Program (U.S.).

August 19, 1982: Svetlana Savitskaya (U.S.S.R.) becomes the second woman in space. Two years later, in 1984, she becomes the first woman to perform a spacewalk.

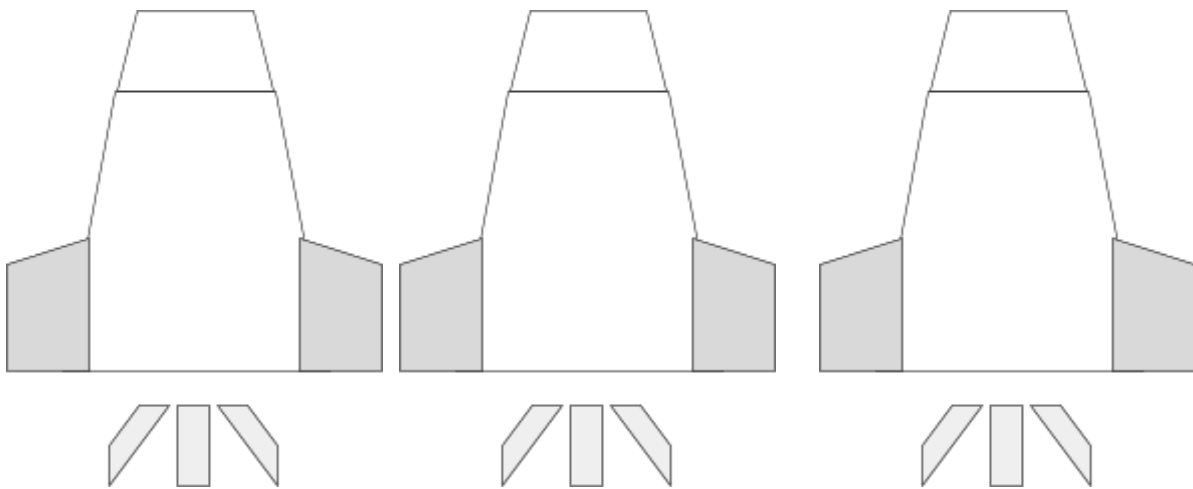
June 18, 1983: Sally K. Ride (U.S.) becomes first American woman astronaut.

September 12, 1992: Mae C. Jemison (U.S.) becomes the first Black woman in space.

Pre-Organizing

A strong essay will use evidence in order to make an argument. This evidence will come from the documents you examine. This exercise is to help you start thinking about how to organize your essay.

Using the analytical question that this DBQ asks and the Background Essay, identify three categories that you could use to sort your evidence. These categories should be fairly broad as you will want multiple pieces of evidence to fit into them. Write down the name of your three categories in the following rocket ships:



Keeping these categories in mind, read through the following documents and start listing your pieces of evidence under the appropriate category. As you start filling in your rocket ships with evidence, think about how you can make the names of your three categories more specific for your essay.

Document A

Source: Excerpts from Steven Mintz's *Huck's Raft: A History of American Childhood*.

Note: Following World War II, there was a massive increase in births in the U.S., which historians characterize as a "baby boom."

"The baby boom placed intense pressure on schools. In 1952, 50,000 new classrooms were built, and average daily attendance rose by two million. To meet the demand, school systems started double sessions and set up 78,000 makeshift classrooms in churches and vacant stores. Teachers had as many as forty-five students in a class. Parents . . . demanded new school construction. But it took a 184-pound Soviet satellite to precipitate a radical reconsideration of the nature and extent of American education.

[. . .]

The post-Sputnik effort to raise academic standards represented a reaction against educational innovations of the preceding decade. To meet the needs of students who did not plan to go to college, high schools in the 1940s offered an increased number of practical courses to provide preparation for future vocations. 'Life-adjustment' courses, including instruction in health, marriage, and family life, were supposed to promote students' social and emotional development."

Citation: Stevens Mintz, *Huck's Raft: A History of American Childhood* (Cambridge: Harvard University Press, 2004), 287.

Document Analysis:

1. Why were American parents demanding new schools be constructed?
2. What did students growing up in the late 1940s and early 1950s study?

Document B

Source: Excerpts from Amy Sue Bix’s “Engineering Girls: The Evolution of Advocacy for Young Women’s STEM Education.”

In the mid-twentieth century “educational institutions, professional organizations, and popular culture encouraged white boys to grow up to become scientists and engineers while steering other children away. Young women were blocked from much of the scientific and engineering world; the relatively few who persisted often faced daunting opposition.”

“After the Soviet Union’s 1957 Sputnik launch, Cold War fears permeated K-12 teaching, fueled by horror stories about Soviet seventh graders’ proficiency in calculus. . . . Some commentators argued that since the USSR employed female scientists and technicians, the United States could not afford to neglect half its talent. Chemist Betty Lou Raskin told the American Association for the Advancement of Science in 1958, ‘We haven’t even scratched the surface of our female brainpower supply . . . our most valuable untapped natural resource.’ Raskin traced women’s absence from science and engineering to early gender conditioning, blaming children’s absorption of media and advertising messages that valued female beauty over brains.”

Citation: Amy Sue Bix, “Engineering Girls: The Evolution of Advocacy for Young Women’s STEM Education,” in Susan Eckelmann Berghel, Sara Fieldston, and Paul M. Renfro, eds., *Growing Up America: Youth and Politics Since 1945* (Athens: University of Georgia Press, 2019), 191 (top quote), 195 (bottom quote).

Document Analysis

1. Is this a primary or secondary document? How do you know?
2. What was different between the U.S.S.R. and U.S. in terms of women in the fields of science and technology? What did Raskin identify as the reason why?

Document C

Source: Excerpts from National Defense Education Act, 1958.

Note: The passage of the National Defense Education Act was a direct response to the Soviet Union launching Sputnik and represents a large expansion of federal assistance to schools and students.

“The Congress hereby finds and declares that the security of the Nation requires the fullest development of the mental resources and technical skills of its young men and women. The present emergency demands that additional and more adequate educational opportunities be made available. The defense of this Nation depends upon the mastery of modern techniques developed from complex scientific principles. It depends as well upon the discovery and development of new principles, new techniques, and new knowledge.”

“There are hereby authorized to be appropriated \$70,000,000 for the fiscal year ending June 30, 1959, and for each of the three succeeding fiscal years, for (1) making payments to State educational agencies . . .”

“Any State which desires to receive payments under this title shall submit to the Commissioner, through its State educational agency, a State plan which . . . sets forth a program under which funds paid to the State from its allotment . . . will be expended solely for projects approved by the State educational agency for (A) acquisition of laboratory and other special equipment, including audio-visual materials and equipment and printed materials (other than textbooks), suitable for use in providing education in science, mathematics, or modern foreign language, in public elementary or secondary schools, or both . . .”

Citation: National Defense Education Act, September 2, 1958,
<https://www.govinfo.gov/content/pkg/STATUTE-72/pdf/STATUTE-72-Pg1580.pdf>.

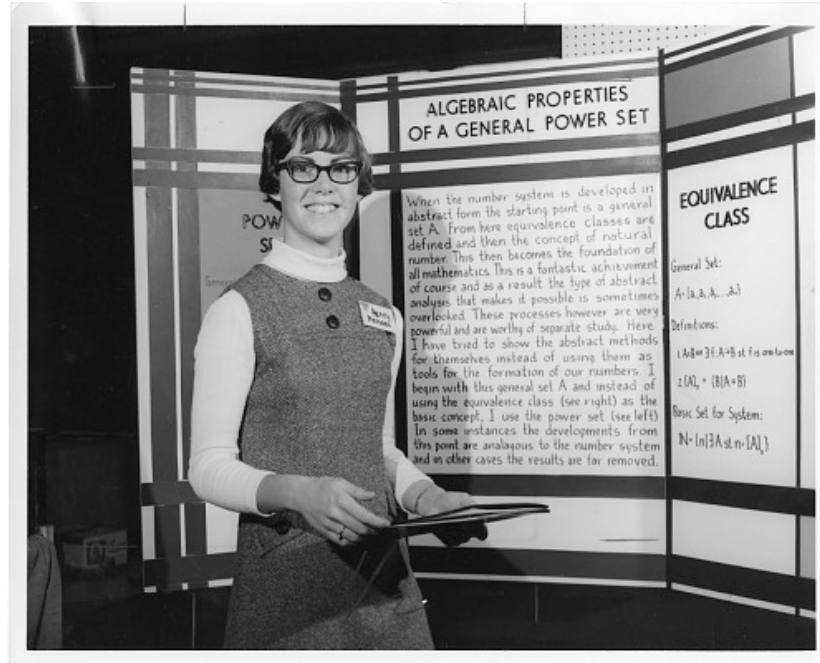
Document Analysis

1. Why did passing the National Defense Act feel so pressing to Congress?
2. How would the National Defense Education Act have shaped girls' education?

Document D

Source: Photo of Penelope Jo Parsons [Maddy] [Maddy]

Note: In March 1968, Maddy won a \$4,000 scholarship in the Science Talent Search competition for her exhibit in the photo below. Science fairs were a popular extracurricular activity during the Cold War.



Citation: Penelope Jo Parsons [Maddy], Smithsonian Institution Archives, Accession 90-105, Science Service Records, Image No. SIA2009-0837, https://siarchives.si.edu/collections/siris_arc_306367.

Document Analysis:

1. What kind of opportunities would extracurricular activities, like science fairs, have offered girls that classrooms would not have?
2. What would girls like Maddy have learned by participating in science fairs?
3. Why would community, state, and nationwide competitions in subjects like science have been important for challenging assumptions about who could be a scientist?

Document E

Source: Letters to *Seventeen* Magazine

Note: In October 1957, *Seventeen* magazine (the first magazine to be published solely for teenage girls) published an article titled “I’ll Take Science,” describing girls who took science classes and encouraging more girls to take them. In December 1957, the magazine published the following letters from girls responding to the article.

“‘I’ll take Science’ (October) expressed my thoughts better than I could have. I’m considered slightly unconventional because I take so many math and science classes, which are made up mostly of boys. But I enjoy these courses and I’d like to encourage other girls to go into the field. I know I’ll be glad I took science!”

-M.G., Briston, Connecticut

“It’s true that not *all* students are interested in science and math, but it’s not true that girls are less interested than boys. There are more girls in my intermediate algebra class than boys and at least as many in my chemistry class. Some of the girls have become more interested and better in these subjects than the boys!”

-J.S., Flushing, New York

“I’m one of the ‘science naturals’ mentioned in your article. I love biology at school, I’m fascinated by ancient mummies and hieroglyphics at museums. In other words, I like atoms, beetles, and cells; but are people really looking for girls to study them?”

-D.T., Brooklyn, New York

**In response to D.T.’s letter above, the editors of *Seventeen* replied:

“We’ve said it before; we’ll say it again. People really are. Labor Department figures show that in some sciences the supply of trained women technicians doesn’t meet the demand even today.”

Citation: “Your Letters,” *Seventeen*, December 1957, 4.

Document Analysis

1. Summarize how these girls described themselves.
2. Draw two connections between Document B and this document.
3. Why is it significant that a magazine written for girls was encouraging them to study science?

Documents F and G

Source: Girls' Letters to John Glenn (School)

Note: On February 20, 1962, schoolchildren around the U.S. gathered in their classrooms and auditoriums in order to watch John Glenn become the first American to orbit Earth. Hundreds of thousands of students then wrote to the astronaut to describe the event.

*All misspellings and grammatical errors are in the original letters.

"Dear Lt. Colonel John Glenn,

I have not had the chance to write to you since I 'heard' the man telling about your wonderful space flight orbiting the Earth. I am an eighgh grade student at T.M.Peirce School V.H. and Braille section. Most of the children in our school room cannot see T.V. but when you were on our teacher took us to find out what waw going on. Everyone paid close attention, and our teacher excused us from all homework that night. So thanks for getting us out of it. Mr. Glenn, I and all of my friends think that you are a wonderful man. I am very proud to be an American when when I think of your flight. I know that you are a good citezin. (I always get citizen mixed up.)

...

P.S. I got a good report card. And my best mark was in Science. We are going to start studying te solar system again, but we are studying sound now. For extra credit we study about you and write reports. That helps our marks in Science."

-Frances, Philadelphia, PA

"Dear Mr. Glenn,

I would like you to know that I think that your trip around the world 3 times was very stupendous.

Our class was able to watch your take off and part of your landing although a few of our teachers had radios in the rooms. We have only one television in our school and since I am in the sixth grade we were in the back wehre it was hard to see what was going on although I was able to see your actual take off, the attena on top of Cape Canaveral, and Walter Klondike, who was a C.B.S. reporter.

...

There was one boy in our room who thought that Russia was better than the United States. My girl friends and I decided to all chip in and give him a one way ticket to Russia."

-Pam, Pittsburgh, PA

Citations: Frances to John Glenn, April 25, 1962, Box 27, Folder 4, The Ohio State University Archives, The John Glenn Archives, Record Group 57/a-1, Non-Senate Papers Sub-group, NASA Series, Mercury 7 Sub-series; and Pam to John Glenn, February 20, 1962, Box 27, Folder 4, The Ohio State University Archives, The John Glenn Archives, Record Group 57/a-1, Non-Senate Papers Sub-group, NASA Series, Mercury 7 Sub-series.

Source: Girls' Letters to John Glenn (Aspirations)

Note: In their letters to John Glenn, girls also frequently wrote about their interests in science and space, as in the letters below.

*All misspellings and grammatical errors are in the original letters.

"Dear Lt. Col. John Glenn, Brigadier General?

My girlfriend, Cynthia and I and I'm sure the whole country are proud to be Americans today because of the historic event you did today. The whole country is proud of you.

In school we were listening to the radio in the morning and afternoon. We were all saying a prayer for you. When we heard you got up safely, our whole class gave out a yell and when you came back. The whole school was listening to you. We both had tears in our eyes because you did such an excellent job. We really want to congratulate you very much.

. . .

Someday Cynthia and I want to become astronomers or even maybe the first lady astronauts."

-Christine, Chicago, IL

"Dear Colonel Glenn,

As I watch NBC's summary of your trip I am thrilled that you made it so safely. And I know you are too!

About ten minutes before lift-off everyone in my high school stood and said silent prayers for you. We all listened very closely, hopefully, and excitedly to radios all day during your flight.

As I have always been extremely interested in the challenge and excitement of space travel and exploration I am really excited over your flight and I know you are too.

It must have been wonderful. I hope that someday I can be associated with the field in some way.”

-Linda, Rome, GA

“Dear Mr. Glenn,

. . . I am 14 years old and am in the 9th grade. I am interested in space exploration and have kept a scrapbook on your experiences before and after your orbit.

. . .

Would you please send me an autographed picture of you if possible or information of space exploration? I would appreciate it very much.”

-Mary, Layland, Layland, WV

Citations: Christine to John Glenn, February 22, 1962, BOX 26, FOLDER 6, The Ohio State University Archives, The John Glenn Archives, Record Group 57/a-1, Non-Senate Papers Sub-group, NASA Series, Mercury 7 Sub-series; Linda to John Glenn, BOX 25, FOLDER 10, The Ohio State University Archives, The John Glenn Archives, Record Group 57/a-1, Non-Senate Papers Sub-group, NASA Series, Mercury 7 Sub-series; and Mary to John Glenn, August 17, 1962, BOX 24, FOLDER 18, The Ohio State University Archives, The John Glenn Archives, Record Group 57/a-1, Non-Senate Papers Sub-group, NASA Series, Mercury 7 Sub-series.

Documents (F and G) Analysis:

- 1. Identify two things that the majority of the girls’ letters have in common.**
- 2. Using the letters, describe how John Glenn orbiting Earth would have shaped your schoolwork if you were a student in 1962.**
- 3. Why do you think so many girls wrote about their interests in science and space and aspirations to be astronauts in their letters to John Glenn?**
- 4. How did girls understand John Glenn orbiting Earth in terms of Cold War competition between the U.S. and U.S.S.R.?**

Document H

Source: Women Majoring in Science and Engineering

Note: This table shows women as a percentage of all bachelor's recipients in Science and Engineering, 1966-2006.

Academic Year Ending	Total Science & Engineering Fields	Biological & Agricultural Sciences	Earth, Atmos., & Ocean Sciences	Math & Computer Sciences	Physical Sciences	Psychology	Social Sciences	Engineering
1966	24.8	25.0	9.4	33.2	14.0	40.8	34.3	.4
1976	33.6	31.2	18.3	35.3	19.5	54.4	38.8	3.4
1986	39.0	45.5	22.3	38.8	29.8	69.0	45.6	14.5
1996	47.1	50.2	33.3	33.9	37.0	73.0	50.8	17.9
2006	50.3	59.8	41.3	26.6	42.4	77.4	53.7	19.5

Citation: Adapted from National Science Foundation, "Science and Engineering Degrees: 1966-2012," table 11, June 30, 2015, <https://www.nsf.gov/statistics/2015/nsf15326/#chp1&chp2&chp5>.

Document Analysis:

1. What was the general trend in women obtaining a bachelor's degree in Science and Engineering between 1966 and 2006?
2. Which field experienced the greatest increase?

Getting Ready to Write

Step One: Organizing

Review all of the documents and the three categories you identified in Pre-Organizing. Do the categories still fit? How do the documents support the categories?

Once you have reviewed the documents, think about whether your Pre-Organizing categories will work. Do you need to revise any? Remember that multiple pieces of evidence should fit into each category.

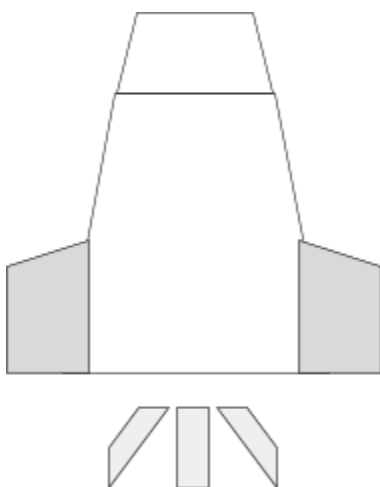
In the chart on the next page, write your final categories above each rocket ship. Next, place the letters of the documents in the rocket ship they belong to. These categories will become your body paragraphs.

Step Two: Thesis Development and Road Map

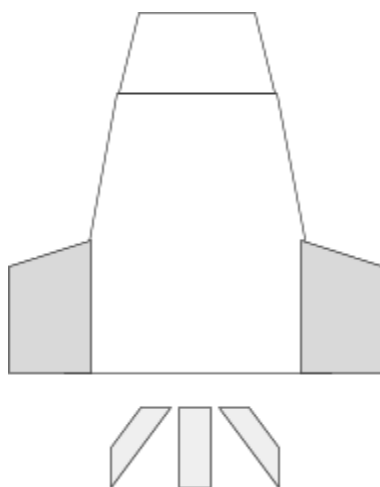
Your “thesis” is the argument you are going to make in your essay. It must answer the DBQ’s question and you must be able to support it with evidence from the documents. Write your thesis on the line to the left.

Below the rocket ships, write your thesis as a one-sentence statement.

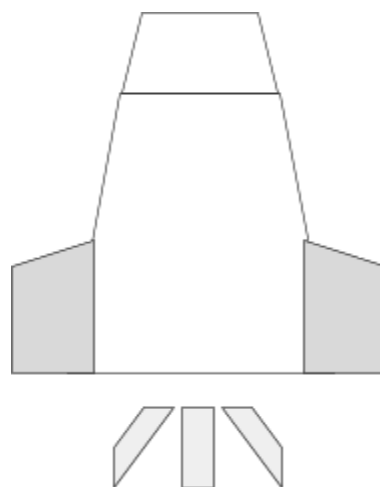
Category:



Category:



Category:



My Thesis:

Step Three: Outlining Your Essay

Working Title:

Introductory Paragraph

Attention Grabber:

Background:

Restating the question:

Thesis:

Body Paragraph 1

Topic Sentence (using rocket ship one):

Evidence (the details from the documents you are going to use and the appropriate citation(s)):

Argument (connect your evidence to the thesis)

Body Paragraph 2

Topic Sentence (using rocket ship two):

Evidence:

Argument:

Body Paragraph 3

Topic Sentence (using rocket ship three):

Evidence:

Argument:

Conclusion

Use an “Although” statement and summarize the main idea of your essay. State your thesis in a different way to remind your reader of your argument and briefly refute an opposing idea.