



A Math and Science @ Work Special Series

CELEBRATING APOLLO

AP* US HISTORY Educator Edition



RACE TO SPACE

Instructional Objectives

Students will

- analyze primary and secondary source documents to be used as supporting evidence;
- incorporate outside information (information learned in the study of the course) as additional support; and
- write a well-developed argument that answers the document-based essay question regarding the analogy between the Race to Space and the Cold War.

Degree of Difficulty

For the average AP US History student the problem may be at a moderate difficulty level.

Background

This problem is part of a series of Social Studies problems celebrating the contributions of NASA's Apollo Program.

On May 25, 1961, President John F. Kennedy spoke before a special joint session of Congress and challenged the country to safely send and return an American to the Moon before the end of the decade. President Kennedy's vision for the three-year old National Aeronautics and Space Administration (NASA) motivated the United States to develop enormous technological capabilities and inspired the nation to reach new heights.

Eight years after Kennedy's speech, NASA's Apollo program successfully met the president's challenge. On July 20, 1969, the world witnessed one of the most astounding technological achievements in the 20th century. Neil Armstrong and Edwin "Buzz" Aldrin became the first humans to set foot on the Moon, while Mike Collins orbited the Moon in the Command Module. Armstrong's words, "That's one small step for [a] man, one giant leap for mankind," were heard around the world and inspired a generation. This amazing accomplishment required the collaboration of hundreds of thousands of determined individuals and the committed resources of our nation.

The "race to space" was initiated on October 4, 1957 with the successful launch by the Soviet Union of Sputnik I. Sputnik, the world's first artificial

Grade Level

10-11

Key Topic

U.S. space efforts from 1957 - 1969

Degree of Difficulty

Moderate

Teacher Prep Time

2 hours

Problem Duration

60 minutes:

- 15 minute document analysis
- 45 minute essay writing

AP Course Topics

- The United States and the Early Cold War
- The 1950's
- The Turbulent 1960's

NCSS Social Studies Standards

- Time, Continuity and Change
- People, Places and Environments
- Science, Technology and Society
- Globalization

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satellite, measured the size of a beach ball (58 cm or 22.8 inches in diameter), weighed only 83.6 kg (183.9 lbs), and orbited the Earth in 98 minutes on an elliptical path. Although relatively small in size, its impact was huge. Americans did not want to be left in the dust by the Soviet's technological advances.

This was at the height of the Cold War and America also worried that the Soviets would use this technology for military purposes. Concerns over Soviet capabilities to launch nuclear weapons quickly emerged and heightened fears among Americans. Despite being economically overshadowed by the United States, the Soviet Union continued its ominous presence in the arms race and space race.

A newly organized NASA met challenges along the way as they strived to meet the goal set by President Kennedy. Despite a rough start to catch the Soviet Union, the United States became the first country to conduct a manned lunar orbit in December of 1968 (Apollo 8). This was followed by the first lunar landing on July 20, 1969 (Apollo 11). The United States celebrated this victory as Kennedy's vision and the hope of a nation was fulfilled.

For more information about NASA's Apollo program visit www.nasa.gov.

Themes in AP U.S. History

- American Identity
- Globalization
- War and Diplomacy

AP Course Topics

The United States and the Early Cold War

- Diplomatic strategies and the policies of the Eisenhower and Kennedy Administrations
- Impact of the Cold War on American Society

The 1950's

- Impact of changes in science, technology, and medicine

The Turbulent 1960's

- From the New Frontier to the Great Society
- Cold War confrontations: Asia, Latin America, and Europe
- The antiwar movement and the counterculture

NCSS Social Studies Standards

- Time, Continuity, and Change
- Power, Authority, and Governance
- Science, Technology, and Society
- Global Connections



Document-Based Essay Question (DBQ)

Directions

The following question requires you to construct a coherent essay that integrates your interpretation of documents A – J *and* your knowledge of the period referred to in the question. High scores will only be earned by essays that both cite key pieces of evidence from the documents and draw on outside knowledge of the period.

Question

To what extent did the "race to space" from 1957-1969 reflect political, social, and economic aspects of the Cold War?

Use the documents and your knowledge of the time period 1957-1969 to construct your response.

Document A

Source: Leonard David. (October 2002). Sputnik 1: The Satellite That Started It All. In *Space.com*. Retrieved August 13, 2009, from http://www.space.com/missionlaunches/sputnik_45th_anniversary_021004.html.

Sputnik came as a surprise to most Americans - but it should not have, observes John Logsdon, Director, of the Space Policy Institute, Elliott School of International Affairs at George Washington University in Washington, D.C.

"Our movies and television programs in the fifties were full of the idea of going into space. What came as a surprise was that it was the Soviet Union that launched the first satellite. It is hard to recall the atmosphere of the time. Fallout shelters, rabid anti-Communism, a sense of imminent danger from without and within," Logsdon said.

With the launch of the Soviet satellite, Logsdon said, the reaction was more fear than surprise, because it showed clearly that the United States was no longer safe behind its ocean barriers. "The claim that who controlled space would control the Earth seemed plausible, and the Soviet Union had taken the first step towards that control," he said.

Document B

Source: Robert D. Launius. (n.d.). Sputnik and the Origins of the Space Age. In *NASA History Division*. Retrieved September 2, 2009, from <http://history.nasa.gov/sputnik/sputorig.html>.

On that same evening of 4 October, Senate Majority Leader Lyndon B. Johnson ...heard the announcement of Sputnik 1's launch on the radio...Johnson's mind kept returning to the heavens as he pondered the Soviet triumph. He recollected, "Now, somehow, in some new way, the sky seemed almost alien. I also remember the profound shock of realizing that it might be possible for another nation to achieve technological superiority over this great country of ours."

...One of Johnson's aides, George E. Reedy, summarized the feelings of many Americans: "the simple fact is that we can no longer consider the Russians to be behind us in technology. It took them four years to catch up to our atomic bomb and nine months to catch up to our hydrogen bomb. Now we are trying to catch up to their satellite."

**Document C**

Source: Library of Congress, Lyndon B. Johnson, Senate majority leader, Senate Armed Services Committee's Preparedness Subcommittee report, January 8, 1958.

In essence, the Soviet Union has appraised control of space as a goal of such consequence that achievement of such control has been made a first aim of national policy. [In contrast], our decisions, more often than not, have been made within the framework of the Government's annual budget. Against this view, we now have on record the appraisal of leaders in the field of science, respected men of unquestioned competence, whose valuation of what control of outer space means renders irrelevant the bookkeeping concerns of fiscal officers.

Document D

Source: Library of Congress, President John F. Kennedy, delivered in person before a joint session of Congress, May 25, 1961.

"...Finally, if we are to win the battle that is now going on around the world between freedom and tyranny, the dramatic achievements in space which occurred in recent weeks should have made clear to us all, as did the Sputnik in 1957, the impact of this adventure on the minds of men everywhere, who are attempting to make a determination of which road they should take. Since early in my term, our efforts in space have been under review. With the advice of the Vice President, who is Chairman of the National Space Council, we have examined where we are strong and where we are not, where we may succeed and where we may not. Now it is time to take longer strides—time for a great new American enterprise—time for this nation to take a clearly leading role in space achievement, which in many ways may hold the key to our future on Earth.

First, I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to the earth. No single space project in this period will be more impressive to mankind, or more important for the long-range exploration of space; and none will be so difficult or expensive to accomplish..."

**Document E**

Source: NASA



Dr. William H. Pickering, Dr. James A. Van Allen and Dr. Wernher von Braun (left to right) hoist a full-scale model of the Explorer I satellite. Explorer I, the first U.S. earth satellite was launched Jan. 31, 1958, four months after the Soviets launched Sputnik I.

Document F

Source: David West Reynolds, *Apollo, the Epic Journey to the Moon*, 2002, pg 34.

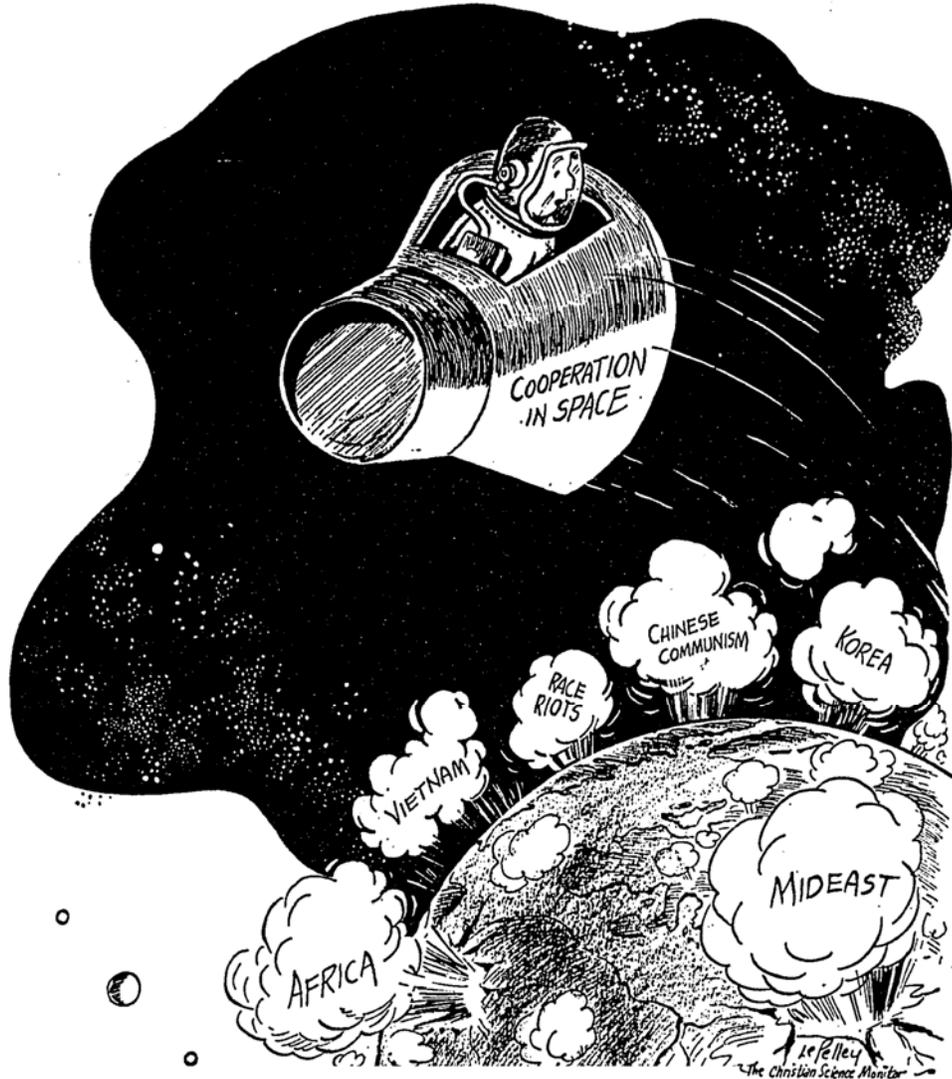
Under the intense media scrutiny of an America waiting desperately for something to salve the national pride, the Vanguard rocket was prepared for launch at Cape Canaveral. On December 6, 1957, the slender, delicate instrument was fired, began to rise, and then sank back down on itself, crushing its engines and erupting into a huge fireball. The pathetic collapse was carried live on television, right in front of the world. *This* was what we were capable of, while the Russians rode the heavens.



Document G

Source: *The Christian Science Monitor*, April 24, 1968

'I hope the sky isn't the limit'



By Guernsey LePelley. Reproduced with permission from the April 24, 1968 issue of the *Christian Science Monitor* (www.CSMonitor.com). ©1968 The Christian Science Monitor



Document H

Source: Nikolai Petrovich Kamanin, head of the cosmonaut corps, *Kamanin Diaries*, December 21, 1968

In the last four years the U.S. has been ahead of us in manned space flights. But few people in the Soviet Union know about it. It is only now when Americans have launched their Apollo-8 that it will be brought home to everyone that we have yielded our supremacy in outer space... It is a red-letter day for all mankind, but for us it is marred by a sense of missed opportunities and a regret that Frank Borman, James Lovell and William Anders and not Valery Bykovsky, Pavel Popovich or Alexei Leonov are flying toward the moon.

...In 1962... the U.S.S.R.'s authority as the top space power was unassailable... we had no doubt that the U.S.S.R. will remain the front-runner in the Space Race. We had faith in our technology and our plans had the backing of our country's leadership headed by [Soviet premier Nikita] Khrushchev... but then we made a terrible blunder... haste brought about the death of [Soyuz 1 commander Vladimir] Komarov and that in turn created a tendency of hedging..."

Document I

Source: Office of Management and Budget, US Federal Government, chart created by Beth Scully.

Year	NASA % of Budget	Defense % of Budget
1958	0.10%	56.80%
1959	0.20%	53.20%
1960	0.50%	52.20%
1961	0.90%	50.80%
1962	1.40%	49.00%
1963	2.80%	48.00%
1964	4.30%	46.20%
1965	5.30%	42.80%
1966	5.50%	43.20%
1967	3.10%	45.40%
1968	2.40%	46.00%
1969	2.10%	44.90%
1970	1.70%	41.80%



Document J

Source: NASA



July 24, 1969, Overall view of Mission Operations Control Room (MOCR) in the Mission Control Center (MCC), Building 30, Manned Spacecraft Center (MSC), showing the flight controllers celebrating the successful conclusion of the Apollo 11 lunar landing mission.



Scoring Guide

To what extent did the "race to space" from 1957-1969 reflect political, social, and economic aspects of the Cold War?

8-9

- Contains a clear, well-developed thesis that addresses the Race to Space in terms of the Cold War.
- Supports thesis with substantial, relevant information covering the time period and the political, social and intellectual aspects of the Race to Space.
- Effectively uses a substantial number of documents.
- Supports the thesis with substantial and relevant outside information.
- Provides effective analysis of all aspects of the question.
- Understands the complexity of the question.
- May contain minor errors that do not detract from the overall essay.

5-7

- Contains an acceptable thesis that addresses the Cold War in relation to the Race to Space.
- Covers only two aspects of the question – political, social and intellectual.
- Supports thesis with some factual information relevant to the question.
- Effectively uses some documents.
- Supports the thesis with some relevant outside information.
- Addresses the question in a general way; may lack depth.
- Provides limited analysis.
- May contain errors.

2-4

- Contains an undeveloped thesis about the relationship between the Race to Space and the Cold War.
- Addresses only one aspect of the question – political, social and intellectual.
- Merely paraphrases, quotes, or briefly cites documents.
- Contains little outside information or information that is inaccurate or irrelevant.
- Provides little or no analysis.
- May contain major errors.

0-1

- Does not contain a thesis.
- May simply paraphrase or restate the question.
- Demonstrates little or no understanding of the question.
- Completely off topic.



Possible Outside Information

- Bomb shelters
- The Cold War
- Origins of the Cold War
- Sputnik
- Cosmonauts
- Project Mercury
- Gemini Program
- Apollo Program
- Civil rights
- Vietnam
- John F. Kennedy
- Lyndon B. Johnson
- Impact of changes in science and technology
- New Frontier
- NASA
- Growth of Defense Industry
- Nikita Khrushchev
- Dwight D. Eisenhower
- John Glenn
- Yuri Gagarin
- Neil Armstrong
- Buzz Aldrin
- Science Fiction books
- Science Fiction movies
- “War of the Worlds”
- Mass hysteria
- Star Wars program



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Celebrating Apollo – Race to Space

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1. This problem successfully accomplished the stated instructional objectives. YES NO

2. The problem was at an appropriate level of rigor to be used in an AP class. YES NO

3. The problem will help prepare students to answer document-based essay questions on the AP exam. YES NO

4. I will use this problem again. YES NO

5. Please provide suggestions for improvement of this problem and associated material:

Thank you for your participation.