

Open Up the Textbook (OUT)

Enlarge

Complicate

Contest

Vivify

In this OUT analysis, 11th grade students will study the Space Race in order to better understand the social, economic and political affects this event had on United States History. This OUT analysis provides students with documents that are meant to deliberately enlarge and vivify the textbook.

Source A: The Textbook – The Americans. McDougal Littell (2007), page 887.

Race to the Moon

On April 12, 1961, Soviet cosmonaut Yuri A. Gagarin became the first human in space. Kennedy saw this as a challenge and decided that America would surpass the Soviets by sending a man to the moon.

In less than a month the United States had duplicated the Soviet feat. Later that year, a communications satellite called Telstar relayed live television pictures across the Atlantic Ocean from Maine to Europe. Meanwhile, America's National Aeronautics and Space Administration (NASA) had begun to construct new launch facilities at Cape Canaveral, Florida, and a mission control center in Houston, Texas. America's pride and prestige were restored. Speaking before a crowd at Houston's Rice University, Kennedy expressed the spirit of "the space race."

"We choose to go to the moon in this decade and do the other things, not because they are easy, but because they are hard, because that goal will serve to organize and measure the best of our energies and skills, because that challenge is one that we are willing to accept, one we are unwilling to postpone, and one which we intend to win, and the other, too." -Address to the Nation's Space Effort, Sept. 12, 1962

Seven years later, on July 20, 1969, the U.S. would achieve its goal. An excited nation watched with bated breath as U.S. astronaut Neil Armstrong took his first steps on the moon.

As a result of the space program, universities expanded their science programs. The huge federal funding for research and development gave rise to new industries and new technologies, many of which could be used in business and industry and also in new consumer goods. Space- and defense-related industries sprang up in the Southern and Western states, which grew rapidly.

Source A Questions for Consideration

1. According to the textbook, what was the primary purpose of the space race?
2. *Determined, defeated or cautious*: Circle the word that best describes America's mentality going into the space race and provide two pieces of evidence from the text to support.
3. In what ways did the space race positively impact the United States?

Source B:

John F. Kennedy Moon Speech - Rice Stadium

September 12, 1962

TEXT OF PRESIDENT JOHN KENNEDY'S RICE STADIUM MOON SPEECH

Excerpted:

...If this capsule history of our progress teaches us anything, it is that man, in his quest for knowledge and progress, is determined and cannot be deterred. The exploration of space will go ahead, whether we join in it or not, and it is one of the great adventures of all time, and no nation which expects to be the leader of other nations can expect to stay behind in the race for space.

Those who came before us made certain that this country rode the first waves of the industrial revolutions, the first waves of modern invention, and the first wave of nuclear power, and this generation does not intend to founder in the backwash of the coming age of space. We mean to be a part of it--we mean to lead it. For the eyes of the world now look into space, to the moon and to the planets beyond, and we have vowed that we shall not see it governed by a hostile flag of conquest, but by a banner of freedom and peace. We have vowed that we shall not see space filled with weapons of mass destruction, but with instruments of knowledge and understanding.

Yet the vows of this Nation can only be fulfilled if we in this Nation are first, and, therefore, we intend to be first. In short, our leadership in science and in industry, our hopes for peace and security, our obligations to ourselves as well as others, all require us to make this effort, to solve these mysteries, to solve them for the good of all men, and to become the world's leading space-faring nation.

Source B Questions for Consideration

1. What reasons does President Kennedy give regarding the significance of putting a man on the moon?
2. Kennedy uses fear and patriotic appeals to persuade Americans. Cite evidence from each paragraph that supports this claim.

Source C: Soviet Propaganda poster used between 1958 & 1963, the height of the Soviet space program.



Translation: "Fatherland! You lit the star of progress and peace. Glory to science, glory to labor! Glory to the Soviet regime!"

Source C Questions for Consideration

1. What do you learn about this document from the sourcing information and translation?
2. List at least ten details you notice in this poster.
3. What is being celebrated in this poster?
4. How is “glory to science, glory to labor, glory to the Soviet regime” visually represented in this piece?
5. How does this piece of work create national “buy-in” for the Soviet space program?

Source D: *Launius, Roger. Public opinion polls and perceptions on US human space flight. Space Policy, 19 (2003) 163–175. (Tape Recording of meeting between President John F. Kennedy and NASA Administrator Webb [20].)*

Unfortunately, too many fail to recognize the very real cold war objectives that led Kennedy to his decision. Absent that crisis he would never have committed to Project *Apollo*. A recently released tape of a White House meeting taking place on November 21, 1962, between President Kennedy and NASA Administrator James E. Webb demonstrate this fact beyond all dispute. Kennedy explained,

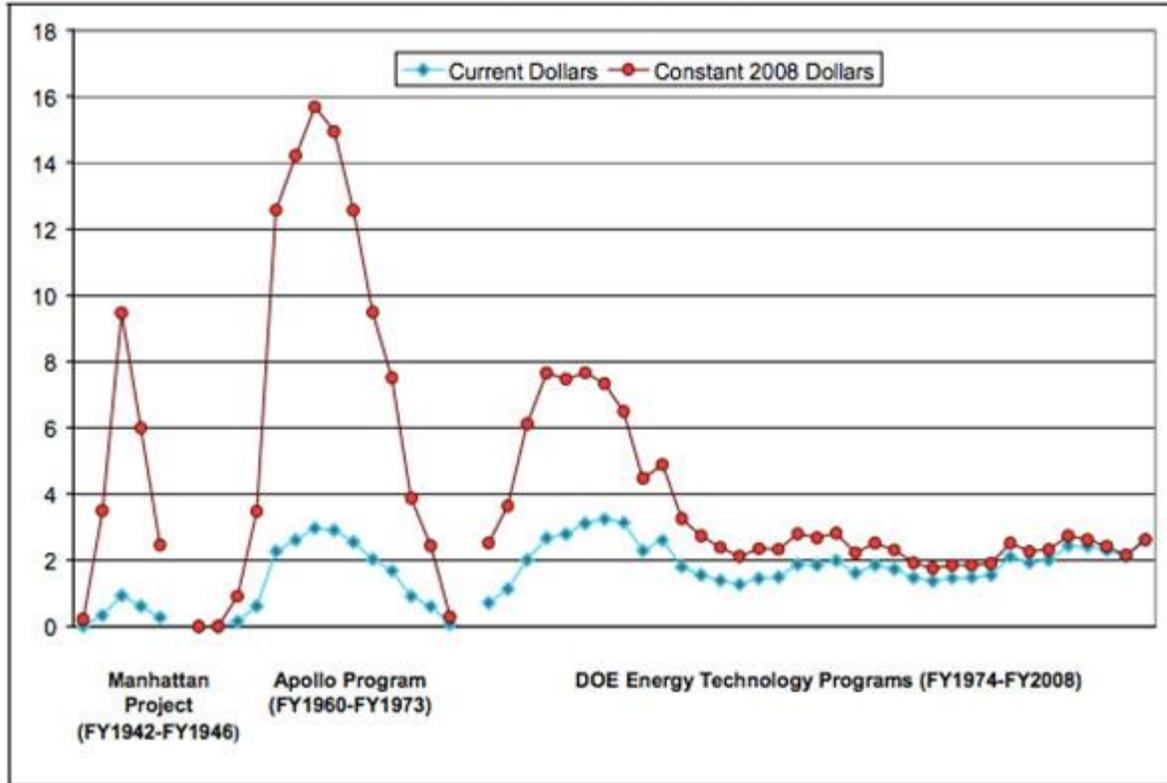
“Everything that we do should be tied into getting on to the Moon ahead of the Russians. We ought to get it really clear that the policy ought to be that this is the top priority program of the agency and one of the top priorities of the United States government.” He added: Otherwise we shouldn’t be spending this kind of money, because I am not that interested in space. I think it’s good. I think we ought to know about it. But we’re talking about fantastic expenditures. We’ve wrecked our budget, and all these other domestic programs, and the only justification for it, in my opinion, is to do it in the time element I am asking.”

Source D Questions for Consideration

1. Kennedy spoke to Rice University on September 12, 1962. How much time separates his speech at the university with this document?
2. According to Kennedy achieving a moon landing will place burdens upon American society. Cite specific evidence to support this statement.
3. What is Kennedy’s only justification for putting a man on the moon?
4. How would this source change the persuasive nature of what was said at Rice University in source B?

Source E:

Figure 2. Annual Funding for Manhattan Project, Apollo Program, and DOE Energy Technology R&D Program



Source: Congressional Research Service. Manhattan Project data: Richard G. Hewlett and Oscar E. Anderson, Jr., *A History of the United States Atomic Energy Commission: The New World, 1939/1946, Volume I*. Apollo program data: Richard Orloff, *Apollo By The Numbers: A Statistical Reference*, NASA SP-2000-4029, 2004 web update. DOE data: CRS Report RS22858, *Renewable Energy R&D Funding History: A Comparison with Funding for Nuclear Energy, Fossil Energy, and Energy Efficiency R&D*, by Fred Sissine.

*Note: The Y axis represents dollar values in the billions.

Source E Questions for Consideration

- 1) Approximately how much did the Apollo program cost in its 14 year existence?
- 2) How much more expensive was the Apollo Program than the Manhattan Project?
- 3) How does this information expand your understanding of the space race?

Source F: "Whitey on the Moon" Poem by: Gil Scott-Heron (1970)

A rat done bit my sister Nell.
(with Whitey on the moon)
Her face and arms began to swell.
(and Whitey's on the moon)
I can't pay no doctor bill.
(but Whitey's on the moon)
Ten years from now I'll be paying still.
(while Whitey's on the moon)
The man just upped my rent last night.
('cause Whitey's on the moon)
No hot water, no toilets, no lights.
(but Whitey's on the moon)
I wonder why he's upping me?
('cause Whitey's on the moon?)
I wuz already paying him fifty a week.
(with Whitey on the moon)
Taxes taking my whole damn check,

Junkies making me a nervous wreck,
The price of food is going up,
An' as if all that crap was't enough:
A rat done bit my sister Nell.
(with Whitey on the moon)
Her face and arm began to swell.
(but Whitey's on the moon)
Was all that money I made last year
(for Whitey on the moon?)
How come there ain't no money here?
(Hmm! Whitey's on the moon)
Y'know I just about had my fill
(of Whitey on the moon)
I think I'll send these doctor bills,
Airmail special
(to Whitey on the moon)

Source F Questions for Consideration

1. What type of text is this? When was it created?
2. How does the author's word choice help us determine his race? Why would the race of the author be important as consideration is given to putting a man on the moon?
3. What complaints or problems are listed in the poem and what are they being contrasted with?
4. How does this document connect to sources D and E? Draw at least two specific comparisons.

Source G: Excerpted from: *Moon-doggle: The Forgotten Opposition to the Apollo Program*. The Atlantic. Alexis Madrigal (9.2012)

Given this outlay during the 1960s, a time of great social unrest, you can bet people protested spending this much money on a moon landing. Many more quietly opposed the missions. Space historian Roger Launius of the National Air and Space Museum has called attention to public-opinion polls conducted during the Apollo missions. Here is his conclusion:

For example, many people believe that Project Apollo was popular, probably because it garnered significant media attention, but the polls do not support a contention that Americans embraced the lunar landing mission. Consistently throughout the 1960s a majority of Americans did not believe Apollo was worth the cost, with the one exception to this a poll taken at the time of the Apollo 11 lunar landing in July 1969. And consistently throughout the decade 45-60 percent of Americans believed that the government was spending too much on space, indicative of a lack of commitment to the spaceflight agenda. These data do not support a contention that most people approved of Apollo and thought it important to explore space.

Etzioni, Amitai. *The Moon-doggle: Domestic and International Implications of the Space Race*. 1964

In an age that worships technology, when man is lost among the instruments he has created, the space race erects new pyramids of gadgetry; in an age of materialism, it piles on more investments in things when what is needed is investment in people; in an age of extrovert activism, it lends glory to rocket-powered jumps, when critical self-examination and reflection ought to be stressed; in an age of international conflicts, which approach doomsday dimensions, it provides a new focus for emotional divisions among men, when tasks to be shared and to bind them are needed...Above all, the space race is used as an escape, by focusing on the moon we delay facing ourselves, as Americans and as citizens of the earth.

Source G Questions for Consideration

1. According to the article from *the Atlantic* what caused the popularity of Project Apollo?
2. Create a t-chart. On one side list the PROs and on the other list the CONs regarding the space race.
3. Is Etzioni's mentality glass half full (optimistic) or glass half empty (pessimistic) towards the space race. Support your response with evidence.
4. How does this source expand your understanding of the space race described in your Source A?

Source H: 10 Tech Breakthroughs to Thank the Space Race For. Rob Mead July 20, 2009

1. Satellite TV

Modern life would be almost unthinkable without having hundreds of TV channels to keep us entertained - and its NASA we have to thank. It needed a way to communicate with astronauts in space, originally using high altitude balloons before eventually developing satellite communications technology in the 1960s. NASA even invented the humble satellite dish, one of over 1,600 spin-offs that come out of the US space program.

2. Laptops

Seriously. The Shuttle Portable Onboard Computer (SPOC) made its debut in 1983, helping astronauts on board the space shuttle to carry out space navigation and other onboard functions and was designed to be tough and powerful. The laptop was developed for NASA by Grid Systems, the first ever model being created by employee, and Brit, William Moggridge in 1979.

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4. Smoke/carbon monoxide detectors

Now used to detect gas leaks in many of our homes, this was originally developed to detect toxic fumes and fire on board the Skylab space station in the early 1970s. NASA didn't invent the whole shebang, but it did make the devices much more reliable by enabling them to tell the difference between toxic fumes and ordinary water vapor using non-dispersive infrared spectroscopy.

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7. 3D graphics and virtual reality

NASA was also instrumental in the development of 3D graphics, virtual reality and flight simulators, chiefly because it needed a way to visualize space-based environments here on earth. The smooth landing on the moon achieved by astronauts onboard the Lunar Excursion Module (LEM) was largely the results of hours of practice using flight simulators.

10. Satellite navigation

NASA can't take the credit for inventing the Global Positioning System (GPS), but it arguably had a big hand in the device that sits on your dash. NASA's Jet Propulsion Laboratory developed Global Differential GPS, which enables vehicles to be placed in three dimensional space with accuracy down to one meter. The technology is used worldwide on commercial aircraft and also in unmanned aerial vehicles (UAVs) currently being used by the US military.

Source H Questions for Consideration

1) Of the technological advances listed above, which do you think has had the greatest impact on humankind? Explain your claim.

Writing Task

This is an argumentative/informational writing task based on NVACS standards [CCSS.ELA-LITERACY.W.11-12.1.A, CCSS.ELA-LITERACY.W.11-12.2.B]. Students will demonstrate their understanding of the texts as well as the ways in which the textbook was enlarged and vivified.

- **Writing Prompts: Choose one of the following**
- **Argumentative Prompt:** Make a claim that the textbook is missing three essential ideas concerning the space race between the United States and Soviet Union. Use at least four of the seven sources (B-H) to site evidence and explain (reasoning) why each new detail is important to a more comprehensive understanding of the space race. After each piece of evidence used place the document letters in parentheses. To fully elaborate upon your claim, you will need to write between 3/4ths to one page (300-400 words).
- **Informational Prompt:** Rewrite the section “Race to the moon” from your textbook to include a more comprehensive representation of the space race. Provide three new details, which would help expand the textbook. Include evidence from at least four of the seven sources (B-H) to show a more wide-ranging understanding of the race to the moon. Organize your ideas and use transition words that guide the reader through the new textbook section seamlessly. After each piece of evidence used place the document letter in parentheses. Your paper should be between 3/4ths to one page (300-400 words).
- **Argumentative Prompt:** Neil Armstrong’s quote in the *Washington Post* (Source E), “One small step for man...giant leap for mankind.” is historically considered one of the more recognizable statements from an American. To what extent does the moon landing warrant the use of these words? Provide three reasons why the use of these words were or were not warranted. Use at least four of the seven sources (B-H) to site evidence and explain (reasoning) why Armstrong's words were warranted or not. After each piece of evidence used place the document letter in parentheses. Your paper should be between 3/4ths to one page in length (300-400 words).