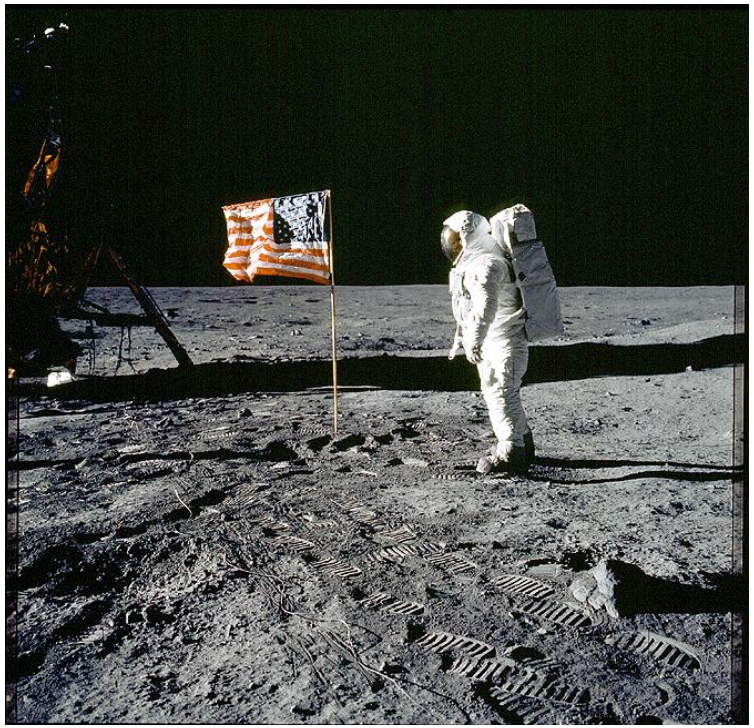
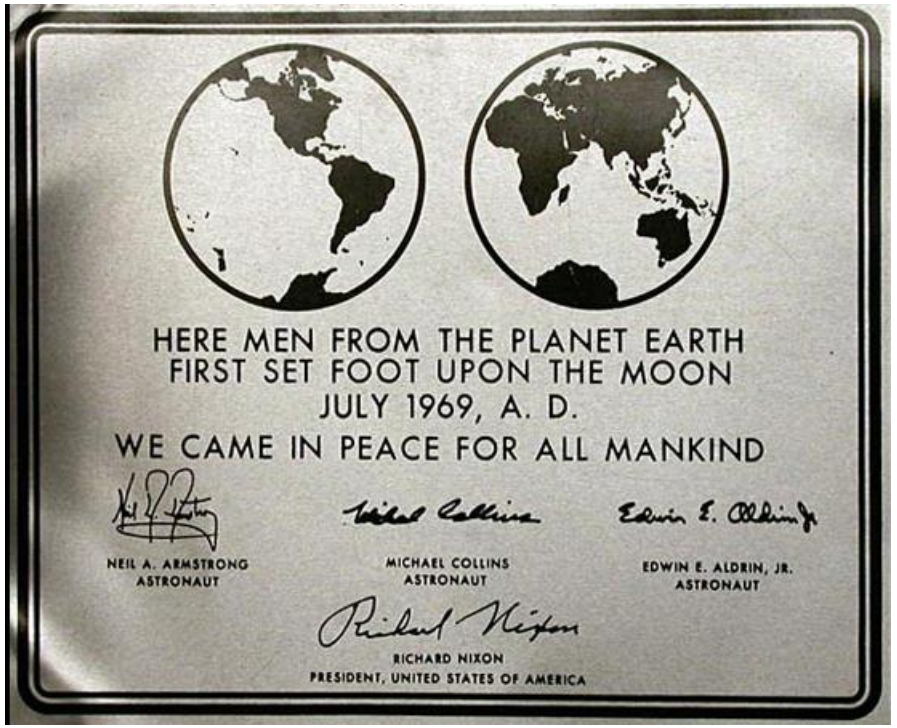
Launching Inquiry:
Using Primary Sources to Explore Space and Power





Ponder the Question:

What story do these images tell?

(We'll come back to this question in a little while)

Welcome to the session, from Dr. Furgione

Contact: Brian.Furgione@gmail.com

Why History and Science Belong Together

Science doesn't happen in a vacuum.
It occupies space and time.
It is shaped by people, politics, and problems.

Welcome to the Wonderful World of Primary Sources!

Why Primary Sources in the Science Classroom?

A strong primary source doesn't just teach history – it can spark curiosity.

It brings the past to life, it can engage the senses, it makes things real.

Why Space?
(DOD Video)

The stage:
1957, Russia has just launched Sputnik. Americans were rattled. Confidence shaken, fears about national security, advanced technology, and global power shifts ignited. In those shoes – how would you feel watching this clip from the USAF?

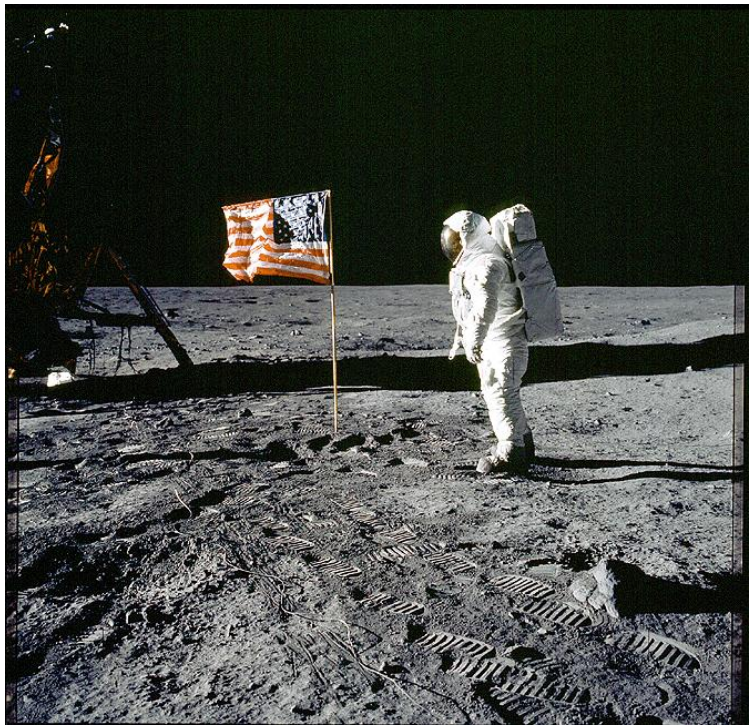
The “Moonshot” Speech

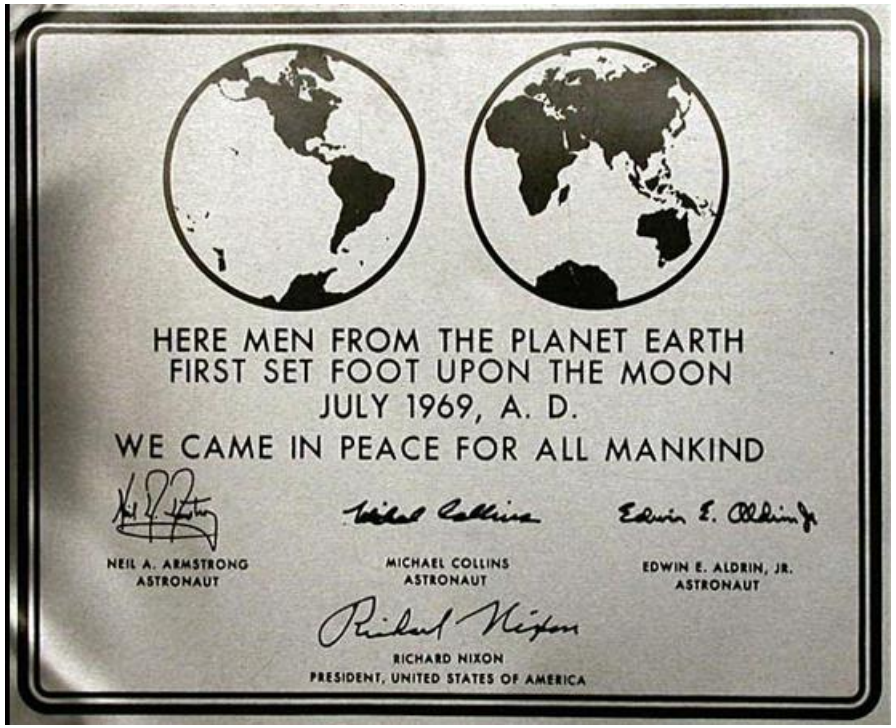
- What sticks out in President Kennedy's language?
- How does he contextualize (justify?) the exploration of space?
- What social studies language does JFK leverage in arguing America must be first?

(4:20-9:30)

Contextualizing Events – Historical Grounding

***Context Note**: On July 20, 1969, the world watched as humans first set foot on the moon. Set within the context of the Cold War, the Space Race was about more than science - it was a race for global power, pride, and proving who would get there first. These three iconic images - the **plaque left behind**, a **lone footprint in lunar dust**, and an astronaut standing beside the **U.S. flag** – tell a story.*





Question to Ponder:

Was the moon landing a scientific achievement or a political message?

Was it a shared human moment or a geopolitical message aimed at Earth?

Where to Find AWESOME Sources

- Library of Congress (LOC.gov)
- NASA History Office & Image Archives
- National Archives (DocsTeach)
- NIH's National Library of Medicine
- ScienceHistory.org
- Smithsonian Learning Lab
- Chronicling America (for historical newspapers)
- Atomic Heritage Foundation
- University & Regional Newspaper Archives

NATIONAL ARCHIVES

LIBRARY OF CONGRESS

Smithsonian *Learning Lab*

TEACHER'S GUIDE

ANALYZING PRIMARY SOURCES

Guide students with the sample questions as they respond to the primary source. **Encourage them to go back and forth between the columns; there is no correct order.**

OBSERVE

Have students identify and note details.

Sample Questions:

What do you notice first? · Find something small but interesting. · What do you notice that you didn't expect? · What do you notice that you can't explain? · What do you notice now that you didn't earlier?

REFLECT

Encourage students to generate and test hypotheses about the source.

Where do you think this came from? · Why do you think somebody made this? · What do you think was happening when this was made? · Who do you think was the audience for this item? · What tool was used to create this? · Why do you think this item is important? · If someone made this today, what would be different? · What can you learn from examining this?

QUESTION

Have students ask questions to lead to more observations and reflections.

What do you wonder about...

who? · what? · when? · where? · why? · how?

FURTHER INVESTIGATION

Help students to identify questions appropriate for further investigation, and to develop a research strategy for finding answers.

Sample Question: What more do you want to know, and how can you find out?

A few follow-up activity ideas:

Beginning
Have students compare two related primary source items.

Intermediate
Have students expand or alter textbook explanations of history based on primary sources they study.

Advanced
Ask students to consider how a series of primary sources support or challenge information and understanding on a particular topic. Have students refine or revise conclusions based on their study of each subsequent primary source.

For more tips on using primary sources, go to

http://www.loc.gov/teachers

Analyze a Photograph

Meet the photo.

What do you see?

Is the photo?

- ❑ BLACK AND WHITE
- ❑ COLOR

Is there a caption?

- ❑ YES
- ❑ NO

If so, what does the caption tell you?

Observe its parts.

Circle what you see in the photo.

PEOPLE OBJECTS BOTH

What are the people doing in the photo?

What are the objects used for in the photo?

Write two words that describe the photo.

Try to make sense of it.

Who do you think took this photo?

Where do you think this photo was taken?

List something that helps you prove where it was taken.

Why do you think the photo was taken?

How does this photo compare to modern times?

Use it as historical evidence.

Where do you think you could find out more information about the people or objects in the photo?

NATIONAL ARCHIVES

Fun with Sources! (Low Prep)

Form N-405
UNITED STATES DEPARTMENT OF JUSTICE
IMMIGRATION AND NATURALIZATION SERVICE
(Rev. 12-24-52)

General Index
Form approved.
Budget Bureau No. 43-R353.7.

ORIGINAL
(To be retained by Clerk of Court)

UNITED STATES OF AMERICA

No. 74-25 / 47888

PETITION FOR NATURALIZATION
(Under General Provisions of the Immigration and Nationality Act)

To the Honorable the District Court of The United States at Birmingham, Alabama

This petition for naturalization, hereby made and filed, respectfully shows:

(1) My full, true, and correct name is Wernher von Braun (Full name which has been used, most frequently, since birth)

(2) My present place of residence is 907 McClung St., Huntsville, Madison (Number and street) (City or town) (County) Alabama (State)

(3) My occupation is Scientist

(4) I am 42 years old. (5) I was born on March 23, 1912 (Month) (Day) (Year) in Wirsitz, Posen, Germany (City or town) (County, district, province, or state) (Country)

(6) My personal description is as follows: Sex male, complexion fair, color of eyes blue, color of hair blond, height 6 feet 0 inches, weight 183 pounds, visible distinctive marks fracture marks on left fore-arm

(7) I am a citizen or subject, or national of Germany (Country of which I am a citizen or subject, or national) married; the name of my wife or husband is Maria Louise von Braun, we were married on February 1, 1947 (Month) (Day) (Year) at Landshut Germany (City or town) (State or country), he or she was born at Berlin Germany (City or town) (County, district, province, or State) (Country) on June 10, 1928 (Month) (Day) (Year) and entered the United States at El Paso, Texas (City or town) (State) on (Month) (Day) (Year) for permanent residence in the United States and now resides at Huntsville, Alabama with me (Number and street) (City or town) (County and State) and was naturalized on (Month) (Day) (Year) at (City or town) (State) certificate No. ; or became a citizen by

(8) I have two (Number) children; and the name, sex, date and place of birth, and present place of residence of each of said children who is living, are as follows:

Iris Careen von Braun	female	12/9/48	El Paso, Texas	Huntsville, Ala.
Margrit Cecile von Braun	female	5/8/52	Huntsville, Ala.	Huntsville, Ala.

(9) My lawful admission for permanent residence in the United States was at El Paso (City or town) Texas (State) under the name of Wernher von Braun on November 2 1949 (Month) (Day) (Year) on the El Paso City Lines (Name of vessel or other means of conveyance)

(10) Since my lawful admission for permanent residence I have not been absent from the United States, for a period or periods of 6 months or longer, except as follows:

DEPARTED FROM THE UNITED STATES			RETURNED TO THE UNITED STATES		
Port	Date (Month, day, year)	Vessel or Other Means of Conveyance	Port	Date (Month, day, year)	Vessel or Other Means of Conveyance

(11) It is my intention in good faith to become a citizen of the United States and to renounce absolutely and entirely all allegiance and fidelity to any foreign prince, potentate, state, or sovereignty of whom or which at this time I am a subject or citizen. (12) It is my intention to reside permanently in the United States. (13) I am not and have not been for a period of at least 10 years immediately preceding the date of this petition a member of or affiliated with any organization proscribed by the Immigration and Nationality Act or any section, subsidiary, branch affiliate or subdivision thereof nor have I during such period engaged in or performed any of the acts or activities prohibited by that act. (14) I am able to read, write and speak the English language (unless exempted therefrom). (15) I am, and have been during all the periods required by law, a person of good moral character, attached to the principles of the Constitution of the United States and well disposed to the good order and happiness of the United States. I am willing, if required by law, to bear arms on behalf of the United States, or to perform noncombatant service in the Armed Forces of the United States, or to perform work of national importance under civilian direction (unless exempted therefrom). (16) I have resided continuously in the United States of America for the term of 5 years at least immediately preceding the date of this petition, to wit, since November (Month) 2 (day) 1949 (Year) and continuously in the State in which this petition is made for the term of 6 months at least immediately preceding the date of this petition, to wit, since May (Month) 10 (Day) 1950 (Year); and during the past 5 years I have been physically present in the United States for at least one-half of that period. (17) I have not heretofore made petition for naturalization: No. on (Month) (Day) (Year) at (City or town) (County) (State) in the (Name of court) Court, and such petition was denied by that Court for the following reasons and causes, to wit:

(18) Attached hereto and made a part of this, my petition for naturalization, are the affidavits of at least two verifying witnesses required by law.

(19) Wherefore I, your petitioner for naturalization, pray that I may be admitted a citizen of the United States of America, and that my name be changed to

I, aforesaid petitioner, do swear (affirm) that I know the contents of this petition for naturalization subscribed by me, and that the same are true to the best of my knowledge and belief, and that this petition is signed by me with my full, true name: SO HELP ME GOD.

Wernher von Braun
(Full, true, and correct signature of petitioner, without abbreviation)

ALIEN REGISTRATION NO. 6 619 556

16—41073-5

Analyzing Sources

Observe

- What do you notice first?
- What do you notice that you can't explain?
- Is there anything you find interesting?

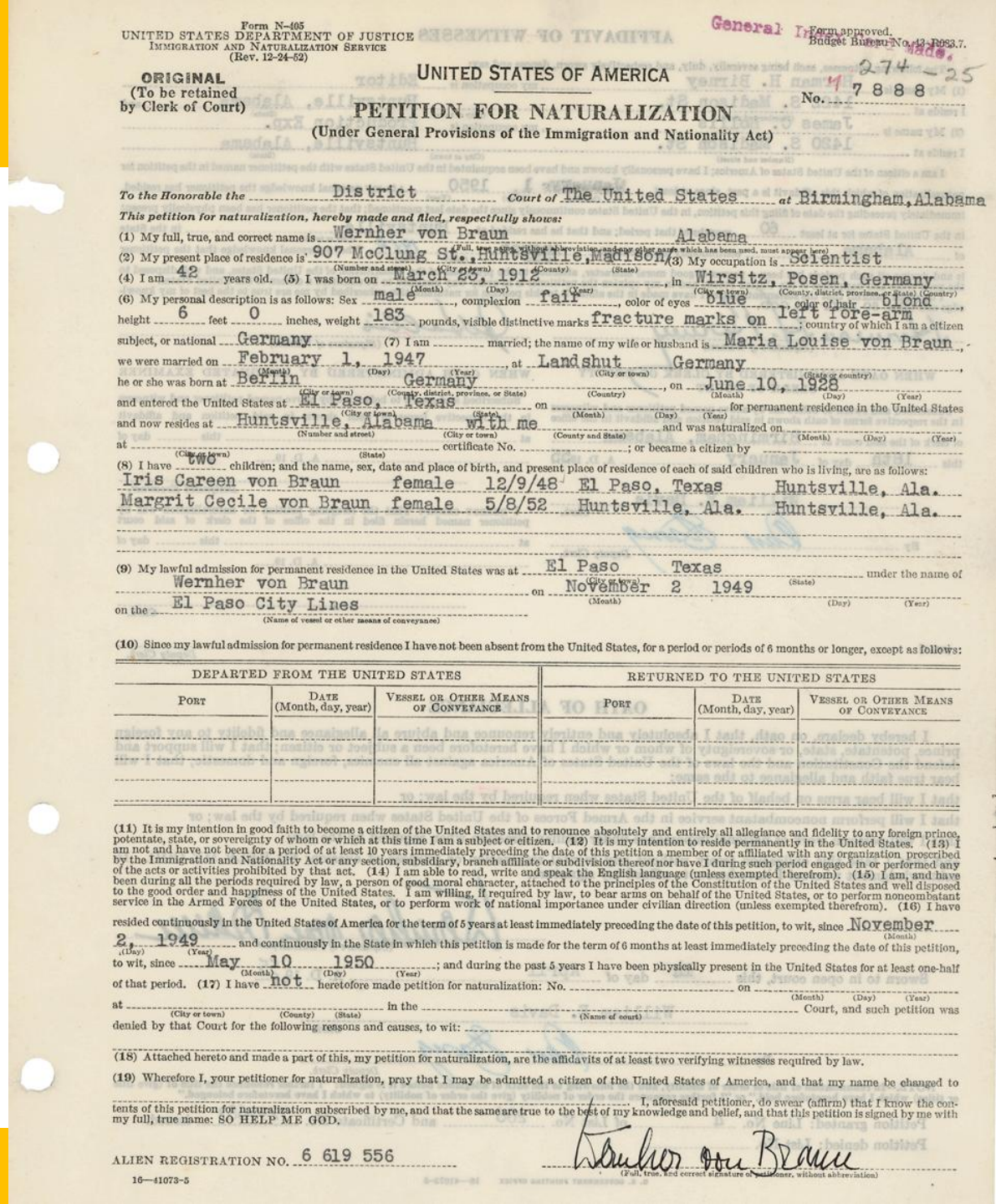
Reflect

- Who do you think made this source?
- Why would they make it?
- Where do you think it came from?
- What was happening when this was made?

Question

- What do you want to know?
- What does this make you think about?

Your Task: Create a caption for this image.



Form N-405
UNITED STATES DEPARTMENT OF JUSTICE
IMMIGRATION AND NATURALIZATION SERVICE
(Rev. 12-24-52)

Form approved.
Budget Bureau No. 43-R063.7.

ORIGINAL
(To be retained by Clerk of Court)

UNITED STATES OF AMERICA

No. 7888

PETITION FOR NATURALIZATION
(Under General Provisions of the Immigration and Nationality Act)

To the Honorable the District *Court of* The United States *at* Birmingham, Alabama

This petition for naturalization, hereby made and filed, respectfully shows:

(1) My full, true, and correct name is Wernher von Braun (Full, true, and correct name without abbreviation, and any other name which has been used, must appear here)

(2) My present place of residence is 907 McClung St., Huntsville, Madison (Number and street) (City or town) (County) Alabama (State) (3) My occupation is Scientist

(4) I am 42 years old. (5) I was born on March 23, 1912 (Month) (Day) (Year) in Wirsitz, Posen, Germany (City or town) (County, district, province, or state) (Country)

(6) My personal description is as follows: Sex male, complexion fair, color of eyes blue, color of hair blond, height 6 feet 0 inches, weight 183 pounds, visible distinctive marks fracture marks on left fore-arm; country of which I am a citizen subject, or national Germany (7) I am married; the name of my wife or husband is Maria Louise von Braun, we were married on February 1, 1947 (Month) (Day) (Year) at Landshut (City or town) Germany (City or country), he or she was born at Berlin (City or town) Germany (County, district, province, or State) (Country), on June 10, 1928 (Month) (Day) (Year) and entered the United States at El Paso, Texas (City or town) (State) on (Month) (Day) (Year) for permanent residence in the United States and now resides at Huntsville, Alabama with me (Number and street) (City or town) (County and State) and was naturalized on (Month) (Day) (Year) at (City or town) (State) certificate No. ; or became a citizen by

(8) I have two children; and the name, sex, date and place of birth, and present place of residence of each of said children who is living, are as follows:

Iris Careen von Braun female 12/9/48 El Paso, Texas Huntsville, Ala.
Margrit Cecile von Braun female 5/8/52 Huntsville, Ala. Huntsville, Ala.

(9) My lawful admission for permanent residence in the United States was at El Paso (City or town) Texas (State) under the name of Wernher von Braun on November (Month) 2 (Day) 1949 (Year) on the El Paso City Lines (Name of vessel or other means of conveyance)

(10) Since my lawful admission for permanent residence I have not been absent from the United States, for a period or periods of 6 months or longer, except as follows:

DEPARTED FROM THE UNITED STATES			RETURNED TO THE UNITED STATES		
Port	Date (Month, day, year)	Vessel or Other Means of Conveyance	Port	Date (Month, day, year)	Vessel or Other Means of Conveyance

(11) It is my intention in good faith to become a citizen of the United States and to renounce absolutely and entirely all allegiance and fidelity to any foreign prince, potentate, state, or sovereignty of whom or which at this time I am a subject or citizen. (12) It is my intention to reside permanently in the United States. (13) I am not and have not been for a period of at least 10 years immediately preceding the date of this petition a member of or affiliated with any organization proscribed by the Immigration and Nationality Act or any section, subsidiary, branch affiliate or subdivision thereof nor have I during such period engaged in or performed any of the acts or activities prohibited by that act. (14) I am able to read, write and speak the English language (unless exempted therefrom). (15) I am, and have been during all the periods required by law, a person of good moral character, attached to the principles of the Constitution of the United States and well disposed to the good order and happiness of the United States. I am willing, if required by law, to bear arms on behalf of the United States, or to perform noncombatant service in the Armed Forces of the United States, or to perform work of national importance under civilian direction (unless exempted therefrom). (16) I have resided continuously in the United States of America for the term of 5 years at least immediately preceding the date of this petition, to wit, since November (Month) 2, (Day) 1949 (Year) and continuously in the State in which this petition is made for the term of 6 months at least immediately preceding the date of this petition, to wit, since May (Month) 10 (Day) 1950 (Year); and during the past 5 years I have been physically present in the United States for at least one-half of that period. (17) I have not heretofore made petition for naturalization: No. on (Month) (Day) (Year) at (City or town) (County) (State) in the (Name of court) Court, and such petition was denied by that Court for the following reasons and causes, to wit:

(18) Attached hereto and made a part of this, my petition for naturalization, are the affidavits of at least two verifying witnesses required by law.

(19) Wherefore I, your petitioner for naturalization, pray that I may be admitted a citizen of the United States of America, and that my name be changed to

I, aforesaid petitioner, do swear (affirm) that I know the contents of this petition for naturalization subscribed by me, and that the same are true to the best of my knowledge and belief, and that this petition is signed by me with my full, true name: SO HELP ME GOD.

ALIEN REGISTRATION NO. 6 619 556

Wernher von Braun
(Full, true, and correct signature of petitioner, without abbreviation)

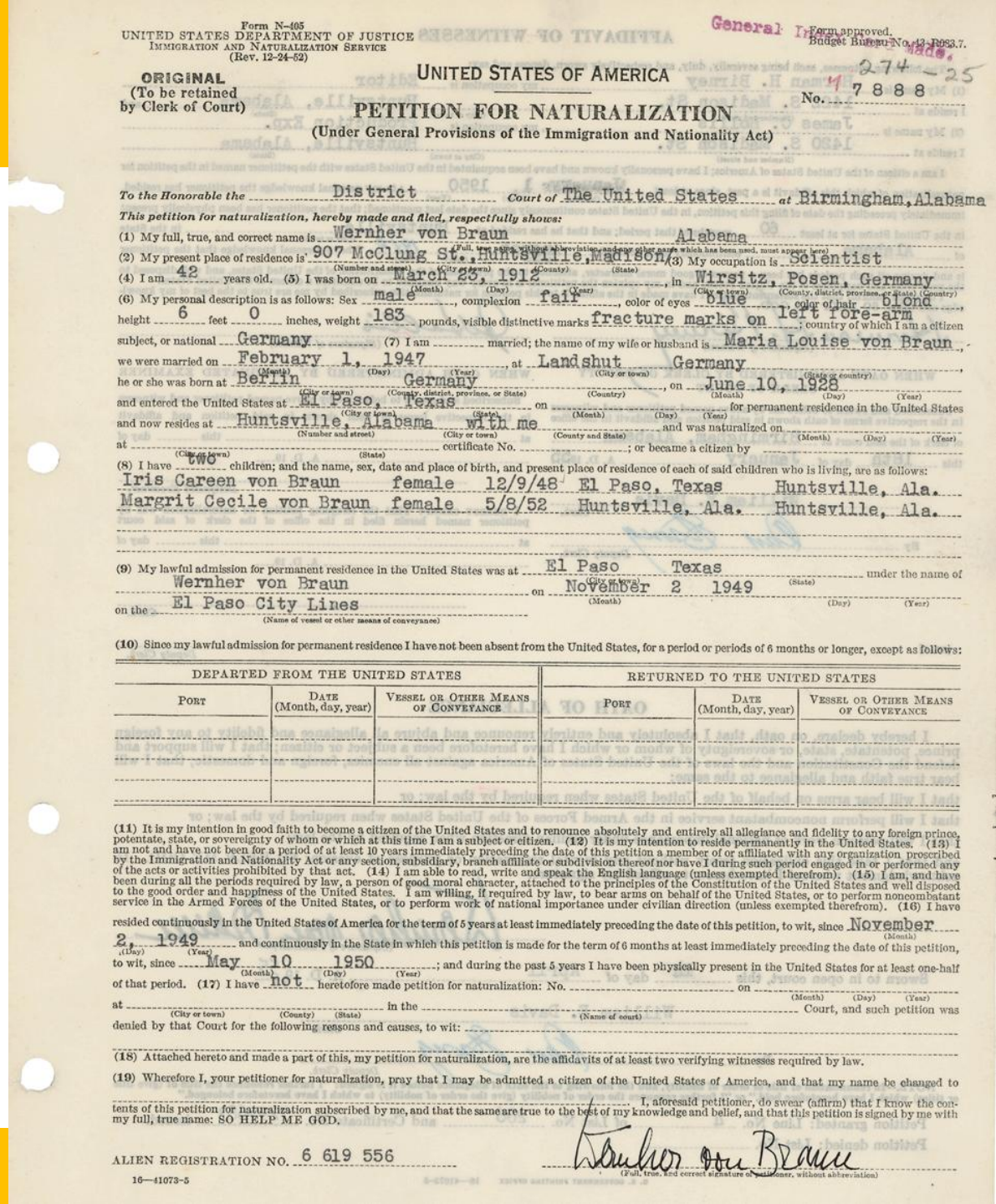
16—41073-5

Analyzing Sources

Image Caption:

Wernher von Braun's Petion for Naturalization

Who: Wernher von Braun, former Nazi rocket scientist, later lead architect of U.S. space program and the Saturn V rocket.
What: A Petition for Naturalization, the official U.S. government form (Form N-405) von Braun submitted to become a naturalized American citizen. This form declared his intent to: Renounce loyalty to Germany, accept allegiance to the United States, fulfill all legal requirements for citizenship
When: Filed 1954
Where: U.S. District Court in Birmingham, Alabama
Why: von Braun was living in Huntsville, Alabama - which would soon become ground zero for America's rocket and space development at Redstone Arsenal. It also symbolized America's willingness to absorb former enemy scientists for the sake of Cold War supremacy - making this document a flashpoint in debates about ethics, patriotism, and pragmatism.
Source: NASA Archives



Form N-405
UNITED STATES DEPARTMENT OF JUSTICE
IMMIGRATION AND NATURALIZATION SERVICE
(Rev. 12-24-52)

Form approved.
Budget Bureau No. 43-R063.7.

General Index Made

274-25

ORIGINAL
(To be retained by Clerk of Court)

UNITED STATES OF AMERICA

No. 1 7888

PETITION FOR NATURALIZATION
(Under General Provisions of the Immigration and Nationality Act)

To the Honorable the District Court of The United States at Birmingham, Alabama

This petition for naturalization, hereby made and filed, respectfully shows:

(1) My full, true, and correct name is Wernher von Braun (Full, true name without abbreviation, and by which name which has been used, must appear here) Alabama

(2) My present place of residence is 907 McClung St., Huntsville, Madison (Number and street) (City or town) (County) (State) (3) My occupation is Scientist

(4) I am 42 years old. (5) I was born on March 23, 1912 (Month) (Day) (Year) in Wirsitz, Posen, Germany (City or town) (County, district, province, or state) (Country)

(6) My personal description is as follows: Sex male, complexion fair, color of eyes blue, color of hair blond, height 6 feet 0 inches, weight 183 pounds, visible distinctive marks fracture marks on left fore-arm; country of which I am a citizen subject, or national Germany (7) I am married; the name of my wife or husband is Maria Louise von Braun, we were married on February 1, 1947 (Month) (Day) (Year) at Landshut Germany (City or town) (Country), he or she was born at Berlin (City or town) Germany (County, district, province, or State) (Country), on June 10, 1928 (Month) (Day) (Year) and entered the United States at El Paso, Texas (City or town) (State) on (Month) (Day) (Year) for permanent residence in the United States and now resides at Huntsville, Alabama with me (Number and street) (City or town) (County and State) and was naturalized on (Month) (Day) (Year) at (City or town) (State) certificate No. ; or became a citizen by

(8) I have two children; and the name, sex, date and place of birth, and present place of residence of each of said children who is living, are as follows:

Iris Careen von Braun female 12/9/48 El Paso, Texas Huntsville, Ala.
Margrit Cecile von Braun female 5/8/52 Huntsville, Ala. Huntsville, Ala.

(9) My lawful admission for permanent residence in the United States was at El Paso (City or town) Texas (State) under the name of Wernher von Braun on November (Month) 2 (Day) 1949 (Year) on the El Paso City Lines (Name of vessel or other means of conveyance)

(10) Since my lawful admission for permanent residence I have not been absent from the United States, for a period or periods of 6 months or longer, except as follows:

DEPARTED FROM THE UNITED STATES			RETURNED TO THE UNITED STATES		
Port	Date (Month, day, year)	Vessel or Other Means of Conveyance	Port	Date (Month, day, year)	Vessel or Other Means of Conveyance

(11) It is my intention in good faith to become a citizen of the United States and to renounce absolutely and entirely all allegiance and fidelity to any foreign prince, potentate, state, or sovereignty of whom or which at this time I am a subject or citizen. (12) It is my intention to reside permanently in the United States. (13) I am not and have not been for a period of at least 10 years immediately preceding the date of this petition a member of or affiliated with any organization proscribed by the Immigration and Nationality Act or any section, subsidiary, branch affiliate or subdivision thereof nor have I during such period engaged in or performed any of the acts or activities prohibited by that act. (14) I am able to read, write and speak the English language (unless exempted therefrom). (15) I am, and have been during all the periods required by law, a person of good moral character, attached to the principles of the Constitution of the United States and well disposed to the good order and happiness of the United States. I am willing, if required by law, to bear arms on behalf of the United States, or to perform noncombatant service in the Armed Forces of the United States, or to perform work of national importance under civilian direction (unless exempted therefrom). (16) I have resided continuously in the United States of America for the term of 5 years at least immediately preceding the date of this petition, to wit, since November (Month) 2, (Day) 1949 (Year) and continuously in the State in which this petition is made for the term of 6 months at least immediately preceding the date of this petition, to wit, since May (Month) 10 (Day) 1950 (Year); and during the past 5 years I have been physically present in the United States for at least one-half of that period. (17) I have not heretofore made petition for naturalization: No. on (Month) (Day) (Year) at (City or town) (County) (State) in the (Name of court) Court, and such petition was denied by that Court for the following reasons and causes, to wit:

(18) Attached hereto and made a part of this, my petition for naturalization, are the affidavits of at least two verifying witnesses required by law.

(19) Wherefore I, your petitioner for naturalization, pray that I may be admitted a citizen of the United States of America, and that my name be changed to

I, aforesaid petitioner, do swear (affirm) that I know the contents of this petition for naturalization subscribed by me, and that the same are true to the best of my knowledge and belief, and that this petition is signed by me with my full, true name: SO HELP ME GOD.

ALIEN REGISTRATION NO. 6 619 556

Wernher von Braun
(Full, true, and correct signature of petitioner, without abbreviation)

16—41073-5

Compare and Contrast

Observe

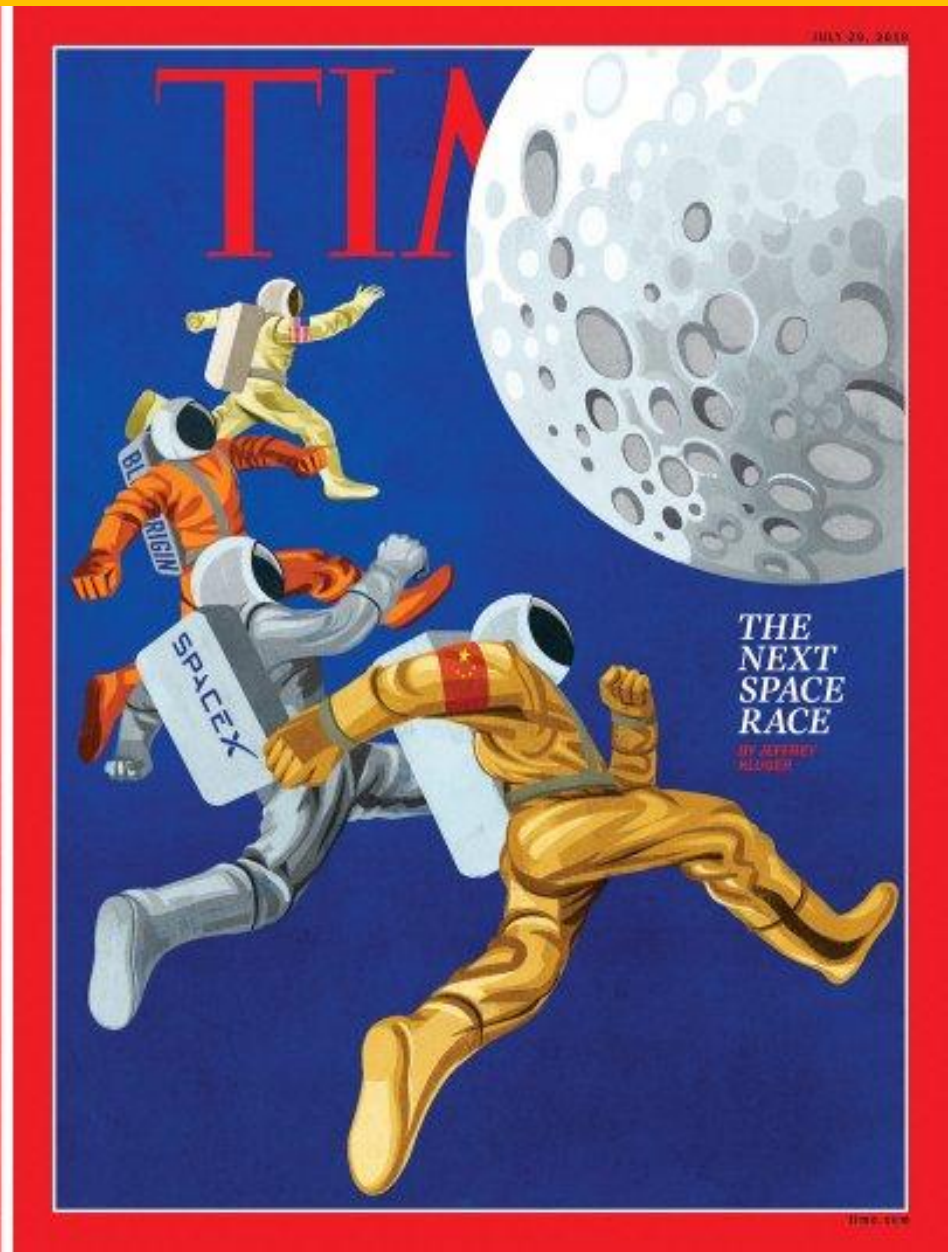
- What do you notice first?
- What do you notice that you can't explain?
- Is there anything you find interesting?

Reflect

- Who do you think made this source?
- Why would they make it?
- Where do you think it came from?
- What was happening when this was made?

Question

- What do you want to know?
- What does this make you think about?



Space Race - Primary Source Brainstorm

The Task: *On your handout, you will find a list of topics/questions. Your goal is to design a mini-set of 3-5 primary sources that you think would help students explore a significant, open-ended question about space exploration or the Cold War era. You don't need to know the exact source but think about what you would want if you could find it (e.g., a Soviet news clip, a NASA memo, etc). Think about what you want your students to examine - the better the ask, the better the get!*

Example: *Who Won the Space Race?*
Guiding Question: *Was the Space Race a victory for science, democracy, or propaganda?*

- JFK's "We Choose to Go to the Moon" Speech (1962)
- Soviet Cosmonaut Propaganda Poster
- New York Times Headline: 'Men Walk on Moon' (1969)
- NASA Budget Graph vs US Education Spending (1961–1975)
- Apollo 11 'One small step…' Mission Audio Transcript

Topic 1: Fear in Orbit - Sputnik's Impact **Guiding Question:** Did Sputnik spark scientific progress, fear, or competition?	**Topic 2:** Peace for All Mankind? **Guiding Question:** Did the Moon landing unite the world or promote American dominance?
Sources • • • • •	**Sources** • • • • •

Topic 3: Science or Strategy? **Guiding Question:** Was space exploration about discovery or military dominance?	**Topic 4:** Progress for Whom? **Guiding Question:** Did the Space Race bring progress for all Americans or leave some behind?
Sources • • • • •	**Sources** • • • • •

_____

_____

_____

🚀 Bell Ringers & Lesson Launchers Using Primary Sources

- **Mystery Image:** Show a historical photo or diagram (e.g., 1800s diving suit, Sputnik, 1910 germ theory ad) – leverage the ORQ strategy.
- **Quote of the Day:** Use a scientist's actual words from a journal, letter, or interview - students respond with what they think it means or why it matters.
- **Scientific "Post-It" Memo:** Show a clipped section of a NASA, CDC, or DOE memo - students predict what's happening or what comes next.
- **Compare & Contrast Warm-Up:** Two images (e.g., 1800s microscope vs modern one) - students list differences and make inferences about technological progress.
- **Ethics Quick Debate:** Drop in a single-sentence excerpt from a controversial scientific moment (e.g., "We must act before others do" from atomic research) - students take a stance.
- **Newspaper Flashback:** Headline from a historic event (e.g., "Spacecraft Lost!") - students infer the event, science involved, or public reaction.
- **Artifact Inference:** Zoomed-in or partial image of a science tool or field note - students guess the object and its purpose.
- **Timeline Teaser:** Give just the date, event name, and a quote - students guess what was happening scientifically or what problem was being tackled.

How We Got to Now

When engaging with sources…
Students see Einstein not just as a genius but as a refugee writing letters to Roosevelt, when they read about NASA engineers pushing back against launch pressure before Challenger, or when they analyze real 1918 flu posters, they learn that science is human.
Science is fallible. Science is courageous. Science lives within context. And most of all, they can question, investigate, and build upon.

Thank You - Let's Chat!