Teacher Activity Guide

Using the newspaper to teach about

HUMAN SPACE EXPLORATION

Tampa Bay Times
newspaper in education
tampabay.com/nie
About this Teaching Trunk

This Teaching Trunk contains material organized around six historic milestones of human space exploration:

- **Sputnik**, the first artificial Earth satellite (1957)
- **Yuri Gagarin**, the first person to fly in space (1961)
- **Apollo I** fire (1967)
- **Apollo 11**, the first Moon landing (1969)
- Space Shuttle **Challenger** explosion (1986)
- Space Shuttle **Columbia** explosion (2003)

Each topic includes a selection of historical newspapers and other resources, such as maps, images, audio files and video files. Hard copies of all resources are provided in the Teaching Trunk. All resources are also included on the enclosed DVD. Most resources can also be downloaded from tampabay.com/nie.

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About Newspaper in Education

The Tampa Bay Times Newspaper in Education program (NIE) is a cooperative effort between schools and the Times Publishing Co. to encourage the use of newspapers in print and electronic form as educational resources – a “living textbook.”

NIE serves educators, students and families by providing Tampa Bay schools with class sets of the Pulitzer Prize-winning *Tampa Bay Times* plus award-winning original educational publications, teacher guides, lesson plans, educator workshops and many more resources – all at no cost to schools, teachers or families.

Our educational resources fall into the category of informational text, a type of nonfiction text. The primary purpose of informational text is to convey information about the natural or social world. NIE teaching materials cover a variety of subjects and are aligned to the Florida Standards.

For more information about NIE, visit tampabay.com/nie, call 727-893-8138 or email ordernie@tampabay.com. Follow us on Twitter at Twitter.com/TBTimesNIE. Like us on Facebook at Facebook.com/TBTNIE.

Credits

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Activity 1
Analyzing Primary Sources: Learning from Newspapers

According to the Center for History and New Media at George Mason University:

“A newspaper is a publication intended for a broad audience that appears regularly, often daily, and claims to contain factual accounts of recent events. Usually newspapers are published with the intention of making a profit. Frequently, their factual content is accompanied by advertisements and non-factual material intended as entertainment.

Journalists often boast that they write “the rough draft of history.” The key point here is rough draft. Newspapers are written in haste and often contain inadvertent factual errors, large and small. Moreover, a newspaper’s “factual” content is determined by its point of view or bias. This point of view is shaped by the political positions taken by editors and publishers, and sometimes shaped by the newspaper’s commercial relationship with advertisers.

It is also shaped by a newspaper’s location. For example, the *Tampa Bay Times* might call a hurricane in Florida a terrible catastrophe, while a newspaper in Idaho might ignore it entirely.

Newspapers from the past contain several kinds of information for historians. They offer factual accounts of events such as earthquakes, battles, and elections. Historians often mine newspapers for basic information about who did what, when, how, and where. Newspapers are also filled with contextual information, such as advertisements and features, from which historians can build a more complete picture of the world in which a particular event took place.”

Some items in newspapers, such as eye-witness accounts and editorials, are considered primary sources.

Others may not be considered primary sources but can still be very useful to help understand historical events.

Historians generally use newspapers for three purposes:

- **Learning facts about specific events** – Newspapers can be used to locate facts related to a specific event. Newspapers from the place and time in which the event occurred can contain first-hand accounts and details not included in other sources such as textbooks.
• **Looking for long-term trends** – Newspapers can be used to look for evidence of long-term trends. For example, classified advertisements can tell us about changes in prices of apartment rentals over time, or about the titles or salary ranges for various kinds of jobs. Display advertising can tell us how many new movie theaters are opening in a town or what kinds of food people are looking for in the supermarkets. Advice columns can show changes over time in what people considered to be problems and what newspaper writers considered to be solutions for those problems.

• **Searching for details or the “texture” surrounding an event** – Details from other parts of the newspaper can help flesh out a newspaper story. For example, weather reports can tell us if it was raining on the day of the battle. Store advertising can suggest what people might have worn to vote on the day of the election. Movie reviews and television listings can tell us what stories people cared about in the month of an epidemic.

Have students use the list of guiding questions below and the [Library of Congress Primary Source Analysis Tool](https://www.loc.gov/tools/classroom-activities/) to analyze newspaper articles from the historic newspapers included in this Teaching Trunk.

**Newspaper Article Analysis Guiding Questions**

**OBSERVE: Identify and note details**
- Who published the article? Who was the audience for this article? Who was the audience for this newspaper?
- What type of article is this (eye-witness account, straight news article, feature article, editorial, column, reader contribution)?
- On what page and section does the article appear? What are the topics of other articles found on the same page or section?
- Is place relevant to this article? How?
- Are one or more dates listed in the article? Was this article written at or around the same time period that the text relates to?
- What information is highlighted by the headline and other text callouts, if present?
- Are there any photos or illustrations? What additional information or explanation do they provide?
- What does the text describe, explain, or provide an opinion on?

**REFLECT: Generate and test hypotheses**
- What is the main idea of the article? List several facts or arguments that support the main idea of the article.
- Is this article a news story or an opinion piece? Is the article trying to inform or persuade? How do you know?
• Are there details that reference other people or events of the time period? What was happening during this time period?
• Why do you think this text was made? What might have been the author’s or publisher’s purpose? What evidence supports your theory?
• Who do you think was the audience for this article? What evidence supports your conclusion?
• If there was information about the author included, does that information suggest certain biases that person might have had? What do you think those biases were?
• Why do you think the author chose to include these specific details of description or explanation? What information or perspectives might have been left out of the article?
• What source or sources does the author quote or refer to in the article? Do you think these sources are reliable? Why or why not? What evidence supports your conclusion?
• Does this article show clear bias? If so, towards what or whom? What evidence supports your conclusion?
• What do you think the author might have wanted the audience to think or feel? Does the arrangement or presentation of words, illustrations, or both affect how the audience might think or feel? How?
• What do you feel after reading this article?
• If someone wrote this text today, what would be different? What would be the same?
• What did you learn from examining this article? Does any new information you learned contradict or support your prior knowledge about the topic of this article?

QUESTION: What didn’t you learn that you would like to know about?
• What questions does this article raise?
• What do you wonder about . . .
  Who?
  What?
  When?
  Where?
  Why?
  How?
• Examine the words and phrases the author uses. Does the author’s language support a particular perspective? Are different viewpoints presented?
• What sources might you consult to learn more?
Extension Activity: The Front Page

On Page One of a newspaper you’ll find many devices designed to draw in prospective readers. The story that the newspaper’s editor considers the most important story of the day is typically located on the upper half of the front page. This space is known as “above the fold.”

Choose two historic newspapers included in this Teaching Trunk. Both should be from the same date.

Write a short analysis of the differences between the front pages.
- What is located above the fold on each newspaper's front page?
- How are they different?
- How are they similar?
- What choices have been made in selecting the headlines and images?
- Do you think this was an effective use of the front page? Why or why not?

Extension Activity: Headlines

A headline in the newspaper gives a general idea of what the news story that accompanies it will be about. Headlines have several purposes:
- Give readers a clear idea what the article is about.
- Tell readers some of the news, even if they don’t have time to read the entire article.
- Make readers want to read the entire article.

Using the historical newspapers included in this Teaching Trunk, have students choose an article that interests them because of the headline and complete the Predicting Information from Headlines worksheet.

Follow Up Activities

- Study the headlines throughout the main news section of one of the historic newspapers included in this Teaching Trunk. Create a list of characteristics common to most headlines (such as large type size, bold letters, few words, etc.). How do these characteristics compare to the headlines in the main news section of a modern copy of the Tampa Bay Times?
- Choose one headline from one of the historic newspapers included in this Teaching Trunk. Rewrite the headline by replacing some of the wording with synonyms. Are there any changes in meaning as a result of this exercise?
Florida Standards
Language Arts: LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.3; LAFS.412.RI.2.4; LAFS.412.RI.2.412; LAFS.412.RI.2.6; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.RI.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10

Adapted from:
“Newspapers,” Center for History and New Media, George Mason University, http://chnm.gmu.edu/worldhistorysources/unpacking/newsmain.html

Resources:
Predicting Information from Headlines Worksheet
Activity 2
Newspaper Archeology

What constitutes history?

History textbooks often focus on elections, wars and “great men.” However, there is also the history of the ordinary, of the forgotten and of the community.

In this activity, you will engage with the “ordinary” past through the analysis of just one artifact: a newspaper.

Individually or in small groups, choose one of the historical newspapers included in this Teaching Trunk.

Imagine that you are an archeologist who has just discovered this newspaper and that you know nothing about the time and place that it comes from. Read the entire newspaper, including all the ads, classifieds, notices etc.

As you read, make notes. Address questions such as:
• What kind of amusements did people in this society enjoy?
• Can we determine what type of political system was in place and the effectiveness of the system?
• What were the major economic activities of this society?
• What kinds of transportation did this society utilize?
• What did people in this society value?
• What were some of the major issues or challenges facing people in this society?

Write an account of the society that this artifact represents based only on what you have read in the newspaper. Be sure to back up your conclusions with evidence from the text. Make a short oral presentation to your class.

Florida Standards
Language Arts: LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.3; LAFS.412.RI.2.4; LAFS.412.RI.2.4; LAFS.412.RI.2.6; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.RI.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10

Adapted from: “Newspaper Archeology,” by Donald Falls, Manatee High School
Activity 3
Fact vs. Opinion

The editorial section of the newspaper provides readers with differing opinions about news events. These articles express opinions and ideas, and are expected to have a point of view. They do not necessarily report news. Instead, they comment on current events.

- **Editorials** are written by a member or members of the editorial staff of a newspaper and express the opinion or idea of the newspaper as a whole.
- **Opinion articles** express the opinion or idea of only the person or people writing the article. These are sometimes called op-eds.
- **Letters to the editor** present the views of the newspaper’s readers.

Editorials and opinion articles are often categorized into four types depending on their purpose:

- To explain, interpret or inform
- To praise or commend
- To argue, persuade, propose a solution or call for action
- To criticize or identify a problem

Knowing the difference between fact and opinion is very important. In this activity, students will look at reporting and opinion pieces to analyze them for their mix of fact and opinion on the sentence level.

Choose two pieces about the same big news event from the historical newspapers included in this Teaching Trunk. One should be a factual news report and the other an interpretive news analysis, editorial or opinion column.

Start by reading them aloud and ask students which is the straight news report and which is the news analysis piece.

Next, have students read the selected articles on their own, labeling each sentence as “F” for fact or “O” for opinion. As they read, have students take notes about the reasons and process they used to distinguish fact from opinion in the article.

Next, in small groups, ask them to compare their labels. Encourage them to think critically as they come to conclusions, considering sources and their reliability, writers’ potential biases and their own biases.

Once groups have finished their work, project the article for all to see and talk through students’ decisions at the sentence level. As a class, create a list of guiding questions to ask when reading any article – news, opinion or a mix – to help differentiate fact from opinion.
Finally, ask students to choose their own article and read it to test the effectiveness of their guiding questions. As with the earlier group task, ask students to focus on distinguishing between fact and opinion on the sentence level, labeling each sentence with an “O” or an “F.”

After their work is complete, reconvene as a class and discuss the efficacy of the guiding questions: Did they work? Were you always able to tell the difference between fact and opinion? Why or why not? What’s difficult about this? What might be changed to make the questions more effective? Why is it important to have such questions in your “reader’s toolbox” as you approach any news media source?

**Extension activity – Here’s What We Think**

Have each student read three editorials or opinion articles from the historical newspapers included in this Teaching Trunk. After reading each article, students should complete the relevant section of the [Newseum Ed Here’s What We Think worksheet](#).

Once students have read the articles and completed the worksheet, discuss their work as a class:
- Which type of editorial/op-ed was most common?
- How can an editorial or opinion article open or advance dialogue on an issue?
- What makes an editorial or opinion piece effective?
- What influence do they have? How do you know?
- Compare and contrast editorial and opinion articles.
Extension activity – Write an Editorial

Have students brainstorm important issues in their school or community. Write the ideas on a board. Have students vote to narrow the list to one issue.

Next, divide students into small groups; each group will be an “editorial board” for a newspaper. As a group, have students decide their position on the issue and outline an editorial.

Using the editorials in the *Tampa Bay Times* and the historical newspapers included in this Teaching Trunk as models, have students write their editorial in class or as homework. Follow this format:

- Begin with an objective statement/introduction of the issue or controversy.
- Give and discuss the opposing viewpoint. (Who are the opponents? What are their opinions?)
- Refute the opposition’s beliefs.
- State your newspaper’s position and reasoning. Use facts and details.
- Offer a realistic solution.
- Conclude concisely.

**Florida Standards:**

**Language Arts:** LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.3; LAFS.412.RI.2.4; LAFS.412.RI.2.4; LAFS.412.RI.2.6; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.RI.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10

**Adapted from:**


**Resources:**

Activity 4
Analyzing Editorial Cartoons

Newspaper editorial cartoons are graphic expressions of their creator’s ideas and opinions.

Editorial cartoons are published in a mass medium, such as a newspaper, news magazine, or the Web. In addition, the editorial cartoon usually, but not always, reflects the publication’s viewpoint.

Editorial cartoons differ from comic strips. Editorial cartoons appear on the newspaper’s editorial or front page, not on the comics page. Editorial cartoons are sometimes referred to as political cartoons, because they often deal with political issues.

Editorial cartoons are based on current events. That means that they are produced under restricted time conditions in order to meet publication deadlines (often 5 or 6 per week).

Editorial cartoons, like written editorials, have an educational purpose. They are intended to make readers think about current political issues.

Editorial cartoons are part of a business, which means that editors and/or managers may have an impact on what is published.

Editorial cartoons provide a window into history by showing us what people were thinking and talking about at a given time and place. Today’s editorial cartoons will provide the same record of our own time.

Since Benjamin Franklin began publishing political cartoons in the eighteenth century, political cartoonists have used their skills to praise, attack, caricature, lampoon and otherwise express their opinions on the most urgent political issues of the day.

Political cartoons began as a street-level phenomenon. In the late eighteenth and early nineteenth centuries, they were often posted on walls or passed from person to person, as well as being published in newspapers. By the end of the nineteenth century, they were an important part of the growing popularity of newspapers and magazines, and the intense competition for readership made provocative cartoons a valuable selling point.

At the beginning of the twenty-first century, political cartoons appear in a wide range of online publications and can still stir up controversy. Political cartoonists, like political writers, have a point to make.
Have students use the list of guiding questions below, the Cartoons for the Classroom Cartoon Evaluation Worksheet, the Library of Congress Primary Source Analysis Tool and the Library of Congress Cartoon Analysis Guide to analyze the historic editorial cartoons included in this Teaching Trunk.

Editorial Cartoon Analysis Guiding Questions

OBSERVE: Identify and note details
- Describe what you see.
- What do you notice first?
- What people and objects are shown?
- What, if any, words do you see?
- What do you see that looks different than it would in a photograph?
- What do you see that might refer to another work of art or literature?
- What do you see that might be a symbol?
- What other details can you see?

REFLECT: Generate and test hypotheses
- What’s happening in this cartoon?
- What was happening when this cartoon was made?
- Who do you think was the audience for this cartoon?
- What issue do you think this cartoon is about?
- What do you think the cartoonist’s opinion on this issue is?
- What methods does the cartoonist use to persuade the audience?

QUESTION: What didn’t you learn that you would like to know about?
- What do you wonder about...
  Who?
  What?
  When?
  Where?
  Why?
  How?
- What more do you want to know, and how can you find out?
Identifying Persuasive Techniques

Cartoonists use a variety of techniques, such as symbolism, exaggeration, labeling, analogy and irony, to communicate ideas and opinions with readers.

Use this Library of Congress Cartoon Analysis Guide to identify the persuasive techniques used in the historical editorial cartoons included in this Teaching Trunk.

<table>
<thead>
<tr>
<th>Symbolism</th>
<th>Cartoonists use simple objects, or symbols, to stand for larger concepts or ideas. After you identify the symbols in a cartoon, think about what the cartoonist means each symbol to stand for.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exaggeration</td>
<td>Sometimes cartoonists overdo, or exaggerate, the physical characteristics of people or things in order to make a point. When you study a cartoon, look for any characteristics that seem overdone or overblown. (Facial characteristics and clothing are some of the most commonly exaggerated characteristics.) Then, try to decide what point the cartoonist was trying to make by exaggerating them.</td>
</tr>
<tr>
<td>Labeling</td>
<td>Cartoonists often label objects or people to make it clear exactly what they stand for. Watch out for the different labels that appear in a cartoon, and ask yourself why the cartoonist chose to label that particular person or object. Does the label make the meaning of the object more clear?</td>
</tr>
<tr>
<td>Analogy</td>
<td>An analogy is a comparison between two unlike things. By comparing a complex issue or situation with a more familiar one, cartoonists can help their readers see it in a different light. After you’ve studied a cartoon for a while, try to decide what the cartoon’s main analogy is. What two situations does the cartoon compare? Once you understand the main analogy, decide if this comparison makes the cartoonist’s point more clear to you.</td>
</tr>
<tr>
<td>Irony</td>
<td>Irony is the difference between the ways things are and the way things should be, or the way things are expected to be. Cartoonists often use irony to express their opinion on an issue. When you look at a cartoon, see if you can find any irony in the situation the cartoon depicts. If you can, think about what point the irony might be intended to emphasize. Does the irony help the cartoonist express his or her opinion more effectively?</td>
</tr>
</tbody>
</table>
Once you've identified the persuasive techniques that the cartoonist used, answer these questions:

- What issue is this political cartoon about?
- What do you think is the cartoonist’s opinion on this issue?
- What other opinion can you imagine another person having on this issue?
- Did you find this cartoon persuasive? Why or why not?
- What other techniques could the cartoonist have used to make this cartoon more persuasive?

**Follow Up Activities**

- Choose one of the historical cartoons included in this Teaching Trunk. Think about the point the cartoonist was trying to make with this cartoon. Were you persuaded? Why or why not?
- Compare two of the historical cartoons included in this Teaching Trunk that are on the same side of an issue. Identify the different methods — such as symbols, allusions or exaggeration — that the two cartoons use to persuade their audience.
- Select one of the historical cartoons included in this Teaching Trunk. Think about the point of view of the cartoonist. Describe or draw how the cartoon might be different if it had been created by a cartoonist with a different point of view.

**Florida Standards**

**Language Arts**: LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.3; LAFS.412.RI.2.4; LAFS.412.RI.2.412; LAFS.412.RI.2.6; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.RI.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10

**Social Studies**: SS.412.A.1.2; SS.912.A.1.4


“The Opper Project,” Ohio State University, https://hti.osu.edu/opper

**Resources:**


Activity 5
Analyzing Photographs and Images

According to the Library of Congress:

“The first photograph published in an American newspaper – actually a photomechanical reproduction of a photograph – appeared in the Daily Graphic on March 4, 1880. Before that time it was common practice for American editors to enlist artists to sketch and report on news events, from steamboat explosions to the battles of the Civil War. It was not until 1919, with the launching of New York's Illustrated Daily News, that American newspapers began to feature photographs routinely.”

Photographs document historic events. But more than that, they tell a story.

Have students use the list of guiding questions below and the Library of Congress Primary Source Analysis Tool to analyze the historic photographs and images included in this Teaching Trunk.

Photograph Analysis Guiding Questions

OBSERVE: Identify and note details

- Describe what you see.
- What do you notice first?
- What people and objects are shown?
- How are they arranged?
- What is the physical setting?
- What, if any, words do you see?
- What other details can you see?

REFLECT: Generate and test hypotheses

- Why do you think this image was made?
- What's happening in the image?
- When do you think it was made?
- Who do you think was the audience for this image?
- What tools were used to create this?
- What can you learn from examining this image?
- If someone made this today, what would be different?
- What would be the same?

QUESTION: What didn’t you learn that you would like to know about?

- What do you wonder about...
  - Who?
  - What?
  - When?
Teacher Activity Guide: Using the newspaper to teach about human space exploration

Where?
Why?
How?
• What more do you want to know, and how can you find out?

Follow Up Activities

• Select one of the historic photographs and images included in this Teaching Trunk and write a caption for it.
• Select one of the historic photographs and images included in this Teaching Trunk. Predict what will happen one minute after the scene shown in the image. One hour after? Explain the reasoning behind your predictions.

Extension Activity – Blue Marble

In 1959, the U.S. satellite Explorer VI took the first photographic image of the planet Earth from space while passing over the Central Pacific Ocean.

In 1972, the astronauts of Apollo 17 took the first photograph of the whole round Earth and the only one ever captured by a human being from space, known as the “The Blue Marble Shot.”

In 2012, 2.5 terabytes of data from 312 orbits of the Suomi National Polar-orbiting Partnership (Suomi NPP) satellite was mapped over existing Blue Marble imagery of Earth to provide a realistic composite of Earth’s city lights.

Using the Photograph Analysis Guiding Questions above, compare these three images of Earth.
Florida Standards:
**Language Arts:** LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.Ri.1.1; LAFS.412.Ri.1.2; LAFS.412.Ri.1.3; LAFS.412.Ri.2.4; LAFS.412.Ri.2.42; LAFS.412.Ri.2.6; LAFS.412.Ri.3.7; LAFS.412.Ri.3.8; LAFS.412.Ri.3.9; LAFS.412.Ri.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10 **Social Studies:** SS.412.A.1.2; SS.912.A.1.4 **Science:** SC.8.E.5.10; SC.912.E.5.7

**Adapted from:**
“The first picture of Earth was taken by the U.S. satellite Explorer VI in 1959,” ReadWriteThink,
http://www.readwritethink.org/classroom-resources/calendar-activities/first-picture-earth-taken-20275.html

**Resources:**
Library of Congress Primary Source Analysis Tool,
http://www.loc.gov/teachers/usingprimarysources/resources/Primary_Source_Analysis_Tool.pdf.
Explorer VI photograph of Earth,
https://upload.wikimedia.org/wikipedia/commons/f/fd/First_satellite_photo_-_Explorer_VI.jpg
Apollo 17 “The Blue Marble Shot,”
https://www.nasa.gov/sites/default/files/images/135918main_bm1_high.jpg
Suomi NPP satellite Black Marble,
https://images-assets.nasa.gov/image/GSFC_20171208_Archive_e001588/GSFC_20171208_Archive_e001588~orig.jpg
Activity 6
Analyzing Maps

Maps are as old as language. Mapmakers use images and lines that convey important information and can sometimes tell stories. Maps can be simple illustrations, or they can be high tech: from GPS to street map views in real time.

Have students use the list of guiding questions below and the Library of Congress Primary Source Analysis Tool to analyze the historic maps included in this Teaching Trunk.

Map Analysis Guiding Questions

OBSERVE: Identify and note details
- Describe what you see
- What do you notice first?
- What size and shape is the map?
- What graphical elements do you see?
- What on the map looks strange or unfamiliar?
- Describe anything that looks like it does not belong on a map
- What place or places does the map show?
- What, if any, words do you see?

REFLECT: Generate and test hypotheses
- Why do you think this map was made?
- Who do you think the audience was for this map?
- How do you think this map was made?
- How does it compare to current maps of this place?
- What does this map tell you about what the people who made it knew and what they didn't?
- If this map was made today, what would be different?
- What would be the same?

QUESTION: What didn’t you learn that you would like to know about?
- What do you wonder about...
  Who?
  What?
  When?
  Where?
  Why?
  How?
- What more do you want to know, and how can you find out?
Follow Up Activities

- Choose one of the historical maps included in this Teaching Trunk and write a brief description of the map in your own words.
- Choose one of the historical maps included in this Teaching Trunk. Use the Internet to search for at least one additional map of the same location from a different time period. Compile a list of changes over time and other differences and similarities between the maps.

**Florida Standards:**

**Language Arts:** LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.3; LAFS.412.RI.2.4; LAFS.412.RI.2.412; LAFS.412.RI.2.6; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.RI.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10 **Social Studies:** SS.412.A.1.2; SS.912.A.1.4; SS.912.H.2.3

**Adapted from:**


**Resources:**
Library of Congress Primary Source Analysis Tool,
http://www.loc.gov/teachers/usingprimarysources/resources/Primary_Source_Analysis_Tool.pdf
Activity 7
Exploring the Economics of Space Exploration

The Soviet Union launched Sputnik I, the first man-made satellite, into space in 1957. Americans watched the Soviet satellite beeping and blinking across the American night sky. Sputnik I weighed only 184 pounds and could do little more than beep, but many people worried that this meant the United States was losing the race to develop space technology.

Pressure exploded from United States politicians and the American public demanding that the country catch up and increase investment in rocket technology and aeronautics.

Then-Senate Majority Leader Lyndon Johnson used his influence to push the Aeronautics and Space Act through Congress the following year. President Dwight D. Eisenhower used the authority granted by this act to establish the National Aeronautics and Space Administration (NASA) on Oct. 1, 1958. When John F. Kennedy took office as President in 1961, he committed the United States to the goal of landing a human on the moon.

Cape Canaveral, Florida, was geographically very well suited to become America's spaceport. It was a sparsely populated strip of flat land facing the ocean. Railroads and ships could bring in the materials to build the launch pad and space station. The Caribbean islands were near enough for monitoring and communication stations.

NASA established a new space launch center on Brevard County's Cape Canaveral in 1962, which had been used as a missile testing center. The next year, President Lyndon B. Johnson renamed the center in honor of the recently assassinated John F. Kennedy, calling it the Kennedy Space Center. Cape Canaveral was also known as Cape Kennedy from 1963 to 1973.

The Space Age changed Florida forever. Thousands of new workers moved to the state and transformed Cape Canaveral into a hub of aeronautics, electronics design and manufacturing.

Cities near the Cape, such as Titusville, Cocoa, Melbourne and Orlando, grew rapidly in population. Factories manufacturing crucial products for the space programs emerged all over the state. Space exploration and related industries pumped billions of dollars of federal funding into Florida's economy.

The National Defense Education Act of 1958 provided federal funding for education, especially in mathematics, science, engineering and modern foreign languages. New science and math programs were created, and existing programs were strengthened, as money poured in to educate Floridians to work in the space industry.
Space became an integral part of Florida’s culture. Communities near Cape Canaveral promoted Florida’s “Space Coast” as a new and exciting destination for tourists. Motels, restaurants and even housing developments adopted space-related themes to capture the interest of visitors and potential new residents. Developers and chambers of commerce emphasized Florida’s role in the space industry to attract new people and new businesses to their communities.

An entire generation of space-industry workers retired in the Space Coast area. Other initiatives, such as environmental services, including the development of solar energy technology, attracted even more skilled workers to the Space Coast. After five decades of space age development, Florida remains one of the nation’s centers for technology and manufacturing industries and still serves as the home of one of the world’s most significant spaceports.

In this activity, students will analyze the impact of the space industry on Florida’s economy.

Introduce the film Florida: Moonport USA. Before watching the film, review with students what they already know about NASA and the space program in Florida. Ask students:

- What do you think the film will be about?
- What are some activities that you expect to see?
- Who are some people you might expect to see?

After viewing the film, have students analyze the film using the Florida: Moonport USA film analysis worksheet.

Next, conduct an in-class discussion of what students learned during the film analysis. Have students refer to details and examples in the film, drawing inferences.

- According to the film, how did NASA and the space program influence Florida’s economy, growth and culture?
- To whom do you think the creators of this film wanted to communicate?
- What does this film tell you about life in Florida at the time it was made?
- How has aerospace research and space exploration development in Florida improved our quality of life?
- Should the United States government continue to fund aerospace research and space exploration?
Extension Activity: Spinoffs – Space in your life

Every day, we interact with technology that was invented or improved by the space program. Spinoffs – industrial or consumer uses of technology invented by NASA – have had a huge economic impact on Florida and the U.S.

Read the NASA 2018 Spinoff brochure and watch the short YouTube video Actor Wil Wheaton On How NASA Space Spinoffs Are Changing Life Here On Earth.

Choose one of the spinoff products featured in these resources. Using the Tampa Bay Times e-Edition, NASA’s Spinoff website and the Internet, research the economic impact of this technology. Consider both positive (such as business startups or improvements to human life and safety) and negative (such as job losses or increased pollution) economic consequences.

Extension Activity: How much is space exploration worth?

Have students use the list of guiding questions from Activity 1 to analyze the following newspaper articles:

- “Space business an economic engine for Florida,” South Florida Sun Sentinel, 2017
Extension Activity: Does the U.S. need a Space Force?

Have students use the [Cartoons for the Classroom Cartoon Evaluation Worksheet](#) from Activity 4 to analyze the following historic editorial cartoons included in this Teaching Trunk:

- “To infinity and beyond,” Bruce Plante, *Tulsa World* / Courtesy of AAEC, 2018
- “Who’s going to pay for that?”, Ed Gamble / Courtesy of AAEC, 2018

Consider the following questions:

- What do these cartoons say about plans to create a new military branch – Space Force – by 2020?
- For now, defense officials can only say it will cost “billions” to set up Space Force. How fast is the U.S. budget deficit growing? What are our biggest expenses?
- What would a Space Force do and who has been performing those duties? Has anything changed to require a new military branch?
- Why do we need a separate Army, Navy, Marines, Air Force and Coast Guard? Do these forces’ activities ever overlap? Do they fight each other for tax money?

**Florida Standards:**

**Language Arts:** LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.3; LAFS.412.RI.2.4; LAFS.412.RI.2.412; LAFS.412.RI.2.6; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.RI.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10 **Social Studies:** SS.412.A.1.2; SS.4.A.8.3; SS.912.A.1.4; SS.912.W.2.15 **Science:** SC.4.E.5.5; SC.8.E.5.12; SC.912.E.5.9; SS.912.H.2.3

**Adapted from:**

**Resources:**


*Florida: Moonport USA* film analysis worksheet,


Actor Wil Wheaton On How NASA Space Spinoffs Are Changing Life Here On Earth,
[https://www.youtube.com/watch?v=RL6zfowq2Xc](https://www.youtube.com/watch?v=RL6zfowq2Xc)

NASA Spinoff website, [https://spinoff.nasa.gov/](https://spinoff.nasa.gov/)

Activity 8
Exploring the Ethics of Space Exploration

Science plays an increasingly important role in our lives. Science stories today involve more than news of the latest invention or medical advance. Every science issue has implications on many levels: personal, social, economic, political and ethical.

Advances in communication technology, for example, may increase connectivity but may also raise questions of privacy rights. Stem cell research may hold the answers to devastating medical conditions, but it raises ethical and moral questions as well.

Space exploration raises many ethical issues. For example, the increasing population of “space junk,” or debris from space missions, increases the potential danger to space vehicles from all nations; while the landing of humans and uncrewed vehicles on the Moon and other planets risks contaminating those environments with microbes from Earth.

One of the most difficult ethical considerations of space exploration involves the risks to the humans involved in crewed missions.

As with terrestrial air travel, where the most dangerous periods are takeoff and landing, the most dangerous periods of space travel are liftoff and re-entry.

The first manned Apollo mission, scheduled for launch on 21 Feb. 21, 1967, was put on hold by the death of the crew in a launch pad fire during a practice session. The crew of Space Shuttle Challenger’s tenth mission, STS-51L, was lost during takeoff. The crew of Space Shuttle Columbia 28th mission, STS-107, was lost during re-entry.

But even after having made it to space, astronauts are not out of danger. Instead, they are exposed to other risks which may prove just as dangerous.

Space is a hostile – and, without protection, lethal – environment for humans. The temperatures in Earth orbit range from a low of -200 degrees F to a high of 250 degrees F. Microgravity causes high blood pressure, muscle atrophy and bone loss. Astronauts living on the International Space Station are exposed to 80 times the radiation of humans on Earth and have experienced permanent vision loss after returning to Earth.

A recent study has shown that Apollo astronauts, the only astronauts subjected to the radiation of deep space, die of cardiovascular diseases four or five times more often than the rest of the astronaut corps.
Have students read the newspaper article “Study is first on deaths of Apollo crew” from the July 31, 2016 edition of Florida Today.

Next, have students watch the video “Apollo Astronauts' Health Issues Reveal a Hurdle to Deep-Space Travel” at https://nieonline.com/tbtimes/videooftheweek.cfm?id=322.

In small groups, have students use the document “Gravity, Who Needs It? NASA Studies Your Body in Space” and NASA’s website at https://www.nasa.gov/ to research the following questions:

- What creates Earth’s magnetic field?
- How does the magnetic field protect life on Earth from excess radiation?
- How could large solar flares threaten astronauts outside the Earth’s protective magnetosphere?
- Are commercial and military pilots exposed to more radiation than earthbound workers?

Next, have each group write an editorial for or against human space exploration, using the editorials in the Tampa Bay Times as models. Groups should use the evidence they gathered during their research to back up their argument. Address questions such as:

- Are human beings just too fragile for deep space exploration?
- Should we rely on unmanned vehicles to explore the solar system and beyond?
- Could we ever build viable space colonies on the moon, Mars or elsewhere?

Extension Activity: NASA’s One-Year Mission & Twins Study

In March 2015, American Astronaut Scott Kelly and Russian Cosmonaut Mikhail Kornienko began a one-year stay (twice as long as typical U.S. missions) on the International Space Station (ISS). The purpose of the One-Year Mission was to study the medical, psychological and biomedical challenges faced by astronauts during long-duration space flight.

The Twins Study evaluated identical twin astronauts Scott and Mark Kelly during the year Scott Kelly was in space. By studying two individuals who have the same genetics, but are in different environments, for one year, researcher hoped to gain broader insight into the subtle effects and changes that may occur in spaceflight as compared to Earth.

Watch the video “What we can learn from Scott Kelly's year in space” at https://nieonline.com/tbtimes/videooftheweek.cfm?id=302.
Discuss as a class:
- What are the biggest hazards for people spending a long time in space?
- Should we send people to Mars? Why or why not? Would you want to go?
- When do you think a manned mission to Mars could take place?
- Should such a mission involve many nations sharing the costs, risks and discoveries?
- Could nations set aside their rivalries to mount space missions?
- What could manned missions do that unmanned missions can't?
- Are robots much better suited to space exploration than people?

**Florida Standards:**

**Language Arts:** LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.3; LAFS.412.RI.2.4; LAFS.412.RI.2.412; LAFS.412.RI.2.6; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.RI.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10

**Social Studies:** SS.912.H.1.5; SS.912.H.3.2

**Science:** SC.412.N.1.1; SC.912.CS-CS.6.7

Adapted from:

*Apollo Astronauts’ Health Issues Reveal a Hurdle to Deep-Space Travel,*
https://nieonline.com/tbtimes/videooftheweek.cfm?id=322

*What we can learn from Scott Kelly’s year in space,*
https://nieonline.com/tbtimes/videooftheweek.cfm?id=302

Resources:

“Study is first on deaths of Apollo crew,” *Florida Today,* July 31, 2016


Activity 9
What Price History?

In 1983, NASA signed a contract to demolish the launch tower used for the Apollo 11 mission launch so that they could modify the launch pad for the space shuttle. The demolition contractor was planning to sell the steel for scrap. Some people wanted the tower preserved for reassembly because of its association with the Apollo 11 flight, even though it was only 20 years old. NASA opposed preserving the tower because of its cost, which was estimated to reach as high as $4 million.

In an article titled "Apollo 11 legacy may save tower from scrap heap," published on March 13, 1983 in the Orlando Sentinel, Charlie Jean wrote that the tower "was the last Earthly foothold for Neil Armstrong, Ed Aldrin and Mike Collins before they thundered off to the Moon. It pointed the way for the Skylab astronauts, for the Apollo-Soyuz voyagers, and for fliers of less renowned missions in the Magellan age of space."

Have students read the Orlando Sentinel article. As a class, discuss the following questions:

- What are the arguments for preserving the Apollo launch tower?
- What are the arguments for dismantling it?
- What makes a place historic?
- Do you think the age of a place has anything to do with people’s willingness to see it as historic? Why or why not?
- Should equipment like this should be preserved or modified for future space flights, saving millions of dollars? If it is preserved, who should pay the cost of preserving it?

Divide students into groups. Have each group try to find a "place" (a building, a transportation system, a park or other natural area, etc.) in their community that is associated with an important event that has occurred in their or their parents' lifetimes.

Ask each group to share what information they have gathered, and then have the class as a whole decide if any or all of the "places" should be considered "historic" and, if so, should they be preserved and/or interpreted for future generations.

(The launch tower was eventually dismantled and stored. Parts of it have been re-erected as part of an interpretive exhibit at the Apollo/Saturn V Center on the grounds of the Kennedy Space Center.)
Florida Standards:
Language Arts: LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.3; LAFS.412.RI.2.4; LAFS.412.RI.2.412; LAFS.412.RI.2.6; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.RI.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10 Social Studies: SS.912.H.1.5; SS.912.H.3.2 Science: SC.412.N.1.1; SC.912.CS-CS.6.7

Adapted from:

Resources:
“Apollo 11 legacy may save tower from scrap heap,” Orlando Sentinel, March 13, 1983
Activity 10
From the Front Page to the History Books

Journalism is often referred to as the first rough draft of history. In this activity, students analyze the similarities and differences between contemporary news coverage and historical accounts to understand:

- The role and importance of journalists’ first reports of breaking news.
- How the initial information evolves over time to become part of the historical record.

Divide students into small groups and give each group one of the historical newspapers included in this Teaching Trunk. Give students 15 to 20 minutes to look at the front pages. Have students fill in the left column of the From the Front Page to the History Books Worksheet with the key facts about their historical event that they can find on their front pages, as well as any questions that are not answered.

Next, give students access to the library or Internet and allow them 15 to 20 minutes to find information to fill in the right column of the From the Front Page to the History Books Worksheet with key facts about their event from a historical source and any answers they can find for the questions they posed in the left column.

Have students complete step 3 on the worksheet, underlining facts that are the same and circling those that do not match up, then underlining the questions for which they found answers and circling those for which they did not.

Give students 15 to 20 minutes to respond to the three questions in step 4 on the worksheet, analyzing their findings.

As a class, discuss:

- Which facts did you find were the same in both sources? Which were only found in one or the other? Why do you think this was the case?
- Which of the questions you wrote after reading the news source are still unanswered? Why do you think that is?
- What is the role of a reporter? What is the role of a historian? Compare and contrast.
- How much time must pass before news becomes history?
Florida Standards


Language Arts: LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.3; LAFS.412.RI.2.4; LAFS.412.RI.2.412; LAFS.412.RI.2.6; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.RI.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10

Adapted from:
From the Front Page to the History Books, Newseum Ed,
https://newseumed.org/tools/lesson-plan/front-page-history-books
From the Front Page to the History Books worksheet, Newseum Ed,

Resources:
From the Front Page to the History Books Worksheet
Activity 11
Analyzing Turning Points in History

Major historic events inevitably bring about changes in society, from politics to daily routines.

Have students answer a warmup discussion prompt: Think about a major event in your life (such as moving, starting at a new school, the arrival of a sibling etc.). How was your life different before and after this event?

This Teaching Trunk contains material organized around six historic milestones of human space exploration: Sputnik; Yuri Gagarin’s flight; the Apollo I fire; the Apollo 11 Moon landing; the Space Shuttle Challenger explosion; and the Space Shuttle Columbia explosion.

For each of these milestones, students will use the front pages of the historic newspapers included in this Teaching Trunk to hypothesize how these major events changed the lives of the people who lived through them.

Students should consider both big changes and small changes. For example, the 9/11 attacks prompted the U.S.-led war in Afghanistan (big change), and it also led to “God Bless America” being played at ballparks (smaller change).

Give students 20 to 40 minutes to work individually or in small groups to make their hypotheses about the changes these events set in motion (left column of chart) and give their evidence/reason for each (right column of chart), using the Analyzing Turning Points in History worksheet.

Next, give students 10 to 20 minutes to respond to the prompt in step 2 on the worksheet, evaluating how these events continue to affect our lives today.

As a class, discuss how major events can change the course of history in big and small ways.

- What were some of the big changes you found evidence to support? What were some of the smaller changes?
- What type of evidence/reasons did you use to make your hypotheses about changes?
- Sort the changes you hypothesized into categories. Possible categories: predictable versus unpredictable; positive versus negative; political versus personal, etc.
- Which event do you think had the biggest impact, resulting in the most significant changes? Why?
Extension Activity – Journaling History

Choose one of the major events covered by this Teaching Trunk. Write a journal entry from the perspective of someone living shortly before this event occurred, then a second entry from after. At the top of your entry, give a description of who “you” (the person writing this journal entry) are. Use the second journal entry to describe some of the changes that have happened in your life since your chosen big event.

Florida Standards
Language Arts: LAFS.412.L.1.1; LAFS.412.L.1.2; LAFS.412.L.2.3; LAFS.412.L.3.4; LAFS.412.RI.1.1; LAFS.412.RI.1.2; LAFS.412.RI.1.3; LAFS.412.RI.2.4; LAFS.412.RI.2.412; LAFS.412.RI.2.6; LAFS.412.RI.3.7; LAFS.412.RI.3.8; LAFS.412.RI.3.9; LAFS.412.RI.4.10; LAFS.412.SL.1.1; LAFS.412.SL.1.2; LAFS.412.SL.2.4; LAFS.412.W.1.1; LAFS.412.W.1.2; LAFS.412.W.3.9; LAFS.412.W.3.10

Adapted from:
Before and After: Analyzing Turning Points in History, Newseum Ed,
https://newseumed.org/tools/lesson-plan/and-after-analyzing-turning-points-history

Resources:
Analyzing Turning Points in History Worksheet