A CURRICULUM GUIDE TO

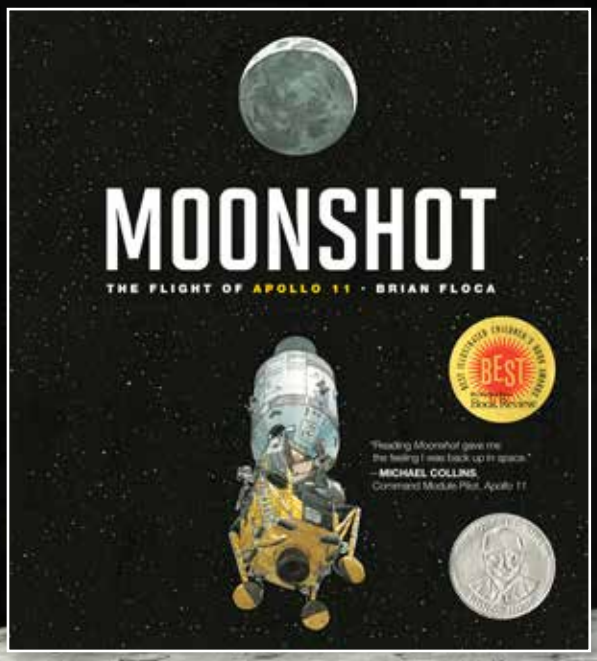
MOONSHOT

THE FLIGHT OF APOLLO 11

BY THE WINNER OF THE CALDECOTT MEDAL FOR LOCOMOTIVE

BRIAN FLOCA

SUMMARY



ON JULY 16, 1969, the *Apollo 11* spacecraft lifted off from Cape Kennedy, Florida, beginning its historic trip to the Moon. *Moonshot* follows this mission from the time the three astronauts suited up—putting on their heavy gloves and large helmets—to their return to Earth one week later.

A combination of poetic language and detailed watercolor and ink illustrations bring this historic mission to life. Readers follow the sequence of events from liftoff to splashdown, as the astronauts leave the warmth and sunlight of the Earth for the cold and quiet of the "magnificent Moon." Language that appeals to the senses—for example, "the hum of the circuits/the whir of the machines"—helps readers envision the past and imagine the excitement of this thrilling experience, not only for the astronauts, but for the people on Earth intently watching on their TV sets.

BACKGROUND INFORMATION

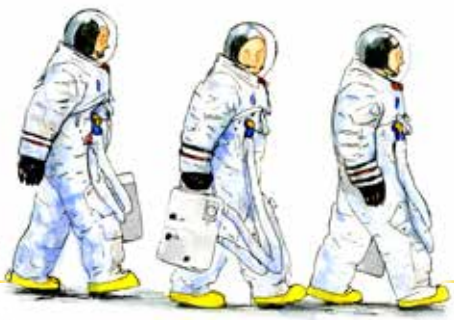
For more information about the flight of *Apollo 11*, visit the following websites:

Videos of the *Apollo 11* mission are posted on the NASA website. Here are a few of the many offerings:

- *Apollo 11* Overview at:
  https://www.youtube.com/watch?v=F9MBpdc6Jyw&feature=youtube_gdata
- Thoughts on *Apollo 11* by a scientist at Mission Control Center at:
  https://www.youtube.com/watch?v=jZdo-S0aqTs&feature=youtube_gdata
- *Apollo 11* Descent at:
  https://www.youtube.com/watch?v=YKXw_3Pblh8&feature=youtube_gdata

Smithsonian National Air and Space Museum provides facts about *Apollo 11*, its crew, images of the mission, and information about the landing site at:
http://airandspace.si.edu/explore-and-learn/topics/apollo/apollo-program/landing-missions/apollo11.cfm

Moonshot Notes: Brian Floca's guide to the details and drawings in *Moonshot* can be found at:
http://brianfloca.com/MoonshotNotes.html



DISCUSSION QUESTIONS/ACTIVITIES

KEY IDEAS AND DETAILS

The Common Core State Standards emphasize helping students develop the ability to identify the main idea in a text and the details that support this idea. In addition, students should be able to summarize information they have read and draw inferences. The activities below reflect these standards:

RI.K–5.1: Ask and answer questions about key details in a text. Older students (grades 3 and up) should be able to quote accurately from a text and draw inferences based on the information read.

RI.K–5.2: Identify main topic and retell key details. Older students (grades 3 and up) should be able to show how the main idea is supported by key details and summarize what they read.

RI.K–5.3: Describe the connection between two individuals, events, ideas, or pieces of information in a text.

DISCUSSING THE MAIN IDEA AND KEY DETAILS

After reading the book, discuss the main idea, which is that **the *Apollo 11* mission was able to land astronauts on the moon and return them successfully to Earth.**

The questions below will help you explore this idea in more detail by using the *5 Ws* and *How?* to gather information. When answering these questions have students provide evidence from the text that supports their answers.

- **Who** went to the moon?
- **What** did the astronauts do to prepare for the flight? What did they accomplish?
- **When** did this flight take place? (Hint: See front endpapers.)
- **Where** did *Apollo 11* begin its flight? **Where** did it end its flight?
- **Why** did it take skill to eat a meal during the flight?
- **How** did Launch Control and Mission Control help with the launch? **How** might a visit to the moon change the way you see Earth?

Encourage students to use the *5 Ws* and *How?* to ask and answer additional questions.

ASKING AND ANSWERING QUESTIONS ABOUT THE PAST

Ask students to use the question stems below to write additional questions that promote historical thinking. These questions will help them think more deeply about the *Apollo 11* mission. Ask students to meet in small groups to ask and answer these thought-provoking questions.

QUESTION STEMS

- What if...?
- What is important to know about...?
- What evidence makes you think that...?
- What do you think explains why...?
- What are the similarities and differences between...?

WRITING A SUMMARY: THE SHORT OF IT

Have students brainstorm a list of important words used to discuss the *Apollo 11* mission. Then have them use some of these words to briefly summarize the story. See if they can keep their summaries under 50 words. In this way, they will have to consider what is most important to remember—the main idea—while deleting the details.

Here is a sample summary:

In 1969, the *Apollo 11* flight lifted off from Cape Kennedy, Florida, and headed toward the moon. Two astronauts landed on the moon, while the third astronaut stayed with the Command Module, *Columbia*. All three astronauts returned safely from the moon to the warmth and light of the Earth.

Craft and Structure

The Common Core State Standards focus on understanding words and phrases that appeal to the senses and contribute to the meaning of a text. They also ask us to pay attention to how the text is organized. The activities below emphasize the following standards:

RL.1–5.4: Identify words and phrases that suggest feelings, appeal to the senses, and supply meaning.

RL.1–4.5: Know and use various text features to locate key facts or information.

BUILDING VOCABULARY

Moonshot introduces readers to words that describe space exploration. Using the pictures and the words in the book, have students make an illustrated glossary of words related to the flight of *Apollo 11*. Here are some suggested words:

Word	Meaning and Illustration
launch control	
mission control	
astronauts	
spaceships (*Columbia* and *Eagle*)	
countdown	
liftoff	
rocket	
orbit	
velcro	
craters	

Taking a Close Look at Words and Phrases

The author uses well-crafted words and phrases to describe the experience of being on the *Apollo 11* flight. Three techniques are illustrated below—repetition of words and phrases, alliteration, and figurative language. Read each example below aloud and discuss how the language helps you understand the experience of being on the *Apollo 11* flight. Then look for additional examples of these techniques.

REPETITION OF WORDS AND PHRASES

Repeating words and phrases provides emphasis and rhythm. Here's an example of how repetition provides rhythm and adds to the excitement of the launch:

As the countdown closes,
each man watching is asked the questions:
"GO/NO GO?"
And each man watching answers back:
"GO."
"GO."
"GO."
***Apollo 11* is GO for launch.**

Here is an example of how the author emphasizes the astronauts' need to wear special clothes:

Here below
there are three men

who close themselves
in special clothes,

who—*click*—lock hands
in heavy gloves,

who—*click*—lock heads
in large round helmets.

Here is how the author emphasizes the uniqueness of the moon as the astronauts head toward it:

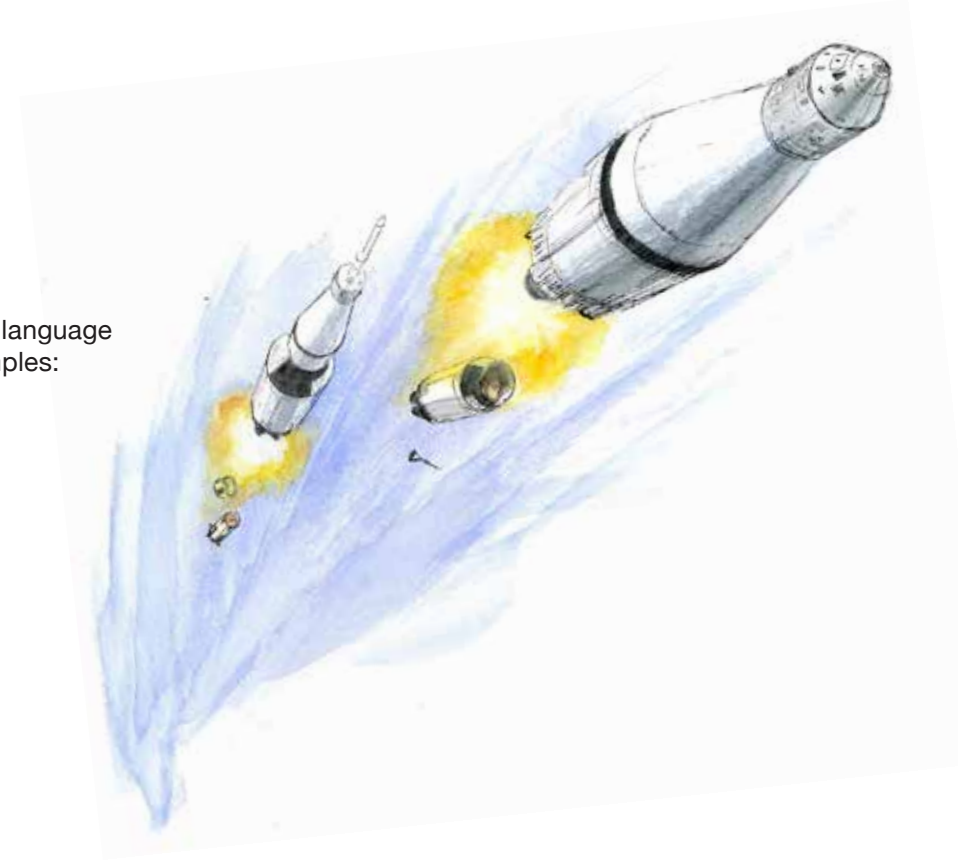
They go rushing into darkness,
flying toward the moon,
far away,
cold and quiet,
no air, no life,
but glowing in the sky.

Here is a repetition of the same phrase as they approach the Moon:

But still ahead
there is the moon,
cold and quiet,
no air, no life,
but glowing in the sky.

Here is a repetition of the phrase *with a significant change*, emphasizing that two astronauts are now standing on the Moon:

—in suits made for the moon,
here below, all around them,
cold and quiet,
no air, but life—
on the strange and silent,
magnificent Moon.



ALLITERATION

Repeating initial consonant sounds helps make language memorable and appealing. Here are a few examples:

Their two small spaceships are
***Columbia* and *Eagle*.**
They sit atop the rocket
that will raise them into space,
a monster of a machine:
It stands thirty stories
it weighs six million pounds,
a tower full of fuel and fire
and valves and pipes and engines,
too big to believe, but built to fly
the mighty, massive *Saturn V*.

FIGURATIVE LANGUAGE

Similes and metaphors create meaning by comparing one thing to another. In the example below, the dust on the moon is compared to a flower in bloom. In this case, the dust *is* a bloom.

***Eagle* slows and lower goes until a spray of dust,**
a bloom of moon, flowers up around her.

In the next example, the astronauts' bodies during takeoff are compared to the weight of clay:

Armstrong, Collins, Aldrin
ride the fire and thunder
pressed deep in their seats,
their bodies as heavy as clay.

Try using repetition, alliteration, and figurative language in your writing. See if it helps you emphasize your ideas and provide rhythm in your writing.

Examining Nonfiction Text Features

Take time to examine how the author not only informs us about the *Apollo 11* space mission, but also captures the excitement and wonder of the event. Look carefully at each of the features on the next page and take notes about how the author uses that feature to inform and create a sense of excitement and wonder. You can use the reproducible at the end of the guide titled "Examining Nonfiction Text Features about the *Apollo 11*" and fill in your answers. Sample ideas to discuss are printed on the following page.

Text Feature	How the Feature Informs and Creates a Sense of Excitement and Wonder
Endpapers	• Front endpapers provide an illustrated timeline of the *Apollo 11* mission, from rollout and launch to the astronauts' successful return to Earth. Readers anticipate a start-to-finish narrative. • Back endpapers provide a great deal of additional information, including an explanation of what Neil Armstrong meant to say when he landed on the moon. Readers can certainly understand how, during such an exciting time, Armstrong didn't precisely say what he intended to.
Repetition of Words and Phrases	• Repeated use of the phrases to describe the moon provide a sense of excitement: High above/there is the moon, /cold and quiet,/ no air, no life,/ but glowing in the sky. • Repeated use of the word *click* appeals to our sense of hearing as we learn about how the astronauts dressed for their launch and later strapped themselves into their seats. This adds to the excitement. • Repeated use of the word *GO*, as each scientist at the Houston Mission Control approves of the launch. This adds to the excitement and anticipation of what will happen next.
Print	Large print adds to the excitement of the event, as in these examples: • Countdown numbers get bigger as they approach ZERO. • LIFTOFF! in large, bold type emphasizes the excitement. • ROAR written in large, overlapping type gives us a sense of the loudness, which the author describes as shaking the air and the earth.
Color	• Illustrations of the Earth have a light, sunny background, while illustrations of the moon are dark and mysterious.

Examining Language that Appeals to the Senses

In this book, the author writes about three different settings—Earth, the moon, and the spacecraft. Collect examples showing how he describes each setting by appealing to our senses of sound, sight, and smell. Add to the chart below, which begins with descriptions of sound or—in the case of the moon—silence:

Descriptions of Earth, spacecraft, and the moon:

EARTH	SPACECRAFT	MOON
It climbs the summer sky. It rides a flapping, cracking flame and shakes the air, and shakes the earth, and makes a mighty ROAR.	Here, where everything floats, it takes some skill to go to sleep. There are no beds or pillows, no night or day. There is always, though the *hum* of circuits, the *whir* of machines…	—in suits made for the moon, here below, all around them, cold and quiet, no air, but life— there is life on the strange and silent, magnificent moon.

WRITING

The Common Core State Standards emphasize writing opinion pieces, informative/explanatory texts, and narratives. The writing activities below reflect the following standards:

W.1–5.1: Write opinion pieces on a topic, supporting a point of view with reasons and information.

W.1–5.2: Write informative/explanatory texts to introduce a topic, use facts to develop it, and provide a conclusion.

W.1–5.3: Write narratives to develop real or imagined experiences, using clear event sequences.

WRITING AN OPINION PIECE

Write opinions about one or more of the following topics:

Book Review: Ask students to write their opinion of *Moonshot*. Discuss and post the following steps to follow:

- Name the book you are writing about and its author.
- Give your opinion of the book.
- Give reasons for your opinion. Use words like *because*, *therefore*, *since*, *in addition*, and *for example* to connect your opinion and reasons.
- Provide a concluding statement.

***Apollo 11* Flight:** On the back endpapers, the author tells us that in May 1961 President John F. Kennedy stated that his goal was for our nation to land a man on the moon and bring him home safely before the end of that decade.

- After reading the endpapers as a class, have students write their opinions of this goal. Was this a good goal for Americans? Why?

WRITING TO INFORM

Imagine that you are Neil Armstrong. Tell what it was like landing on the moon. Explain how you landed the Eagle and then walked around on the moon before returning home with the other two astronauts. Include illustrations. You can draw these illustrations or download them from the Internet.

WRITING A NARRATIVE

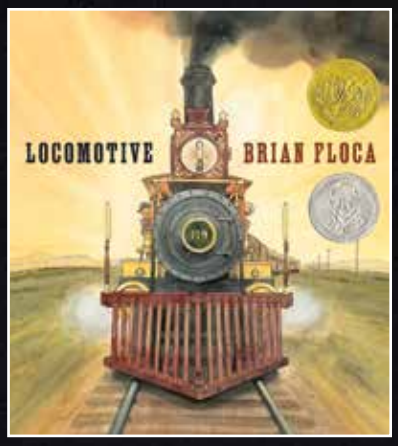
Imagine that the people in the illustrations in *Moonshot* could talk. Select one of these illustrations and write a dialogue, showing what they are saying. Here are some suggestions:

- Tell what the people at Mission Control are saying about the launch.
- Tell what the three astronauts are saying after they unclick their gloves, helmets, and straps and move around onboard the *Columbia* and *Eagle*.
- Tell what the family members watching TV are saying as they listen to Mission Control talking with the astronauts landing on the Moon.

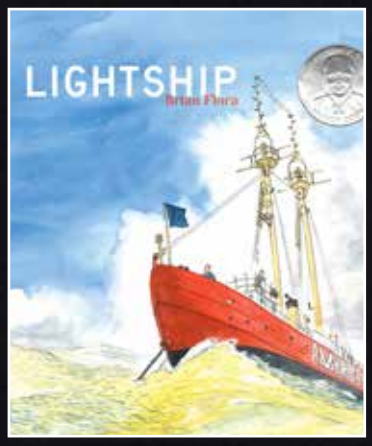
Read More About Brian Floca

- Visit his website at BrianFloca.com
- Watch Brian Floca discuss his latest book, *Locomotive*, at http://www.fcps.edu/fairfaxnetwork/mta/floca.html

Read Other Books by Brian Floca



Join a family as they ride a steam locomotive from Omaha, Nebraska, to San Francisco, California. See what it was like to ride the Transcontinental Railroad.



Take a trip on a lightship, a ship that "holds her place." Find out how lightships once protected other sailing ships by using their bright lights and loud horns to warn these ships of danger.

Read the *New York Times* Front Page Coverage of the Moon Landing

Find this article and many more documents at:
http://topics.nytimes.com/top/news/science/topics/apollo_program/index.html?8qa

Guide written in 2014 by Myra Zarnowski, a professor in the Department of Elementary and Early Childhood Education at Queens College, CUNY.

Examining Nonfiction Text Features about the *Apollo 11*

Text Feature	How the Feature Informs and Creates a Sense of Excitement and Wonder
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Repetition of Words and Phrases	
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