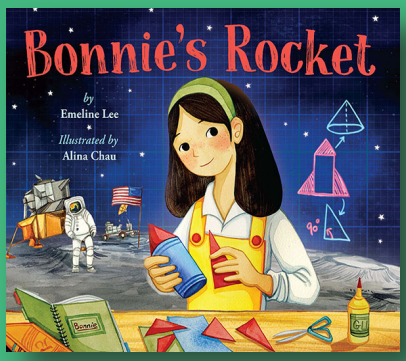
LEE & LOW BOOKS **Teacher's Guide**



Bonnie's Rocket

written by Emeline Lee
illustrated by Alina Chau

About the Book

Genre: Historical Fiction

Format: 40 pages, 11" x 9-1/4"

ISBN: 9781643790695

Reading Level: Grade 4

Interest Level: Grades K–6

Guided Reading Level: P

Accelerated Reader® Level/Points: N/A

Lexile™ Measure:N/A

*Reading level based on the ATOS Readability Formula

Themes: Asian/Asian American Interest, Childhood Experiences and Memories, Courage, Diversity, Dreams & Aspirations, Families, Fathers, Identity/ Self Esteem/Confidence, Imagination, Mentors, Nature/Science, Occupations, Optimism/Enthusiasm, Overcoming Obstacles, U.S. History, Space Exploration, STEAM Learning, Letter Writing

Resources on the web:
leeandlow.com/books/bonnie-s-rocket

All guided reading level placements may vary and are subject to revision. Teachers may adjust the assigned levels in accordance with their own evaluations.

SYNOPSIS

Bonnie's father is an engineer for the Apollo 11 space mission. Bonnie is an engineer too, developing a model rocket that she plans to shoot high into the sky. While Baba works on the moon-landing module far away, Bonnie designs, builds, and tests her own project -- with sometimes disastrous results! Throughout the process, Baba's letters encourage her in her work, and after the astronauts return from the moon, Baba comes home in time to see Bonnie launch her amazing rocket.

Inspired by the experiences of the author's grandfather, who helped design the space suits and life-support systems on the Apollo 11 lunar module, *Bonnie's Rocket* celebrates the diverse team that contributed to one of the United States' greatest achievements. It's also a heartwarming father-daughter story and a terrific gift for budding engineers and space fans of all ages.

BACKGROUND

Author's Note from Emmeline Lee

The story of Bonnie and Baba is inspired by the life of my grandfather, Lau Tung Kwan, who worked as an engineer for the Apollo 11 space mission, during which astronauts first landed on the moon. He was born in Guangzhou, China, in 1929 and immigrated to the United States at age twenty-three to pursue job opportunities and support his family. In the mid-1960s, he began working at the Grumman Aerospace Corporation in Bethpage, New York, where he and his team helped design and build Lunar Modules (LM) for NASA's Apollo space program. The first LM to transport astronauts to the surface of the moon was named the Eagle.

My grandfather's team of engineers was responsible for designing the life-support systems in the LM and the space suits worn by the astronauts. Even in the excitement of implementing new technologies for the space program, he was always guided by the motto "Human safety comes first." His job required him to spend some time away from his family, traveling between the Kennedy Space Center in Merritt Island, Florida, and the Mission Control Center in Houston, Texas. From the launch on July 16, 1969 until splashdown eight days later, he remained on call with Mission Control to help monitor the temperature, air pressure, humidity, and oxygen supply levels within the space suits and the LM.

In addition to the success of the first lunar landing, my grandfather's other memorable experiences include the Apollo 13 mission, during which an oxygen tank unexpectedly exploded on the main spacecraft while in space. The accident forced the astronauts to rely on the LM as their lifeline, and my grandfather was one of the engineers who helped Mission Control manage the LM's oxygen supply during the perilous journey home. The safe return of the Apollo 13 crew amid dire circumstances remains one of NASA's greatest achievements.

The Apollo space program demonstrated the power of a diverse nation working together toward a common goal. The program's legacy continues to fuel dreams of space exploration and inspire current and future generations of innovators to push the boundaries of scientific discovery and cooperation.

How to Build a Rocket like Bonnie's Sky Voyager

Note: This project requires adult supervision when using sharp objects and conducting the launch. Make sure to launch the rocket ship in an open area without obstructions overhead.

Materials:
Scissors
Cardboard
Duct tape
1-liter plastic bottle
Box cutter
Cork

Awl
Water
Bicycle tire pump with inflating needle

For more on how to make your own bottle rocket and the scientific principles behind Bonnie's different launching techniques, visit www.EmelineLee.com.

Instructions

1. Cut four identical fins from the cardboard and tape them to the bottle so they extend about four inches above the opening.
2. Use the box cutter to halve the cork. With the awl, poke a small hole down the center of one half.
3. Fill one-third of the bottle with water and plug the mouth with the cork with the hole in it.
4. Thread the needle of the tire pump through the cork's hole before turning the bottle upside down and resting the fins on level ground.
5. Give the pump a series of quick, strong pushes to fill the rocket with air.
6. Watch your rocket ship launch into the sky!

Lunar Module

The Apollo 11 spacecraft included three parts in addition to the Saturn V rocket: the Command Module, named the Columbia, which was the astronaut living quarters; the Service Module, which included the main propulsion system; and the Lunar Module (LM), named the Eagle, which was the vehicle to carry astronauts to the moon. The Command and Service Modules are sometimes referred to together as the Command and Service Module (CSM).

The Apollo 11 Lunar Module (LM), the Eagle, was the first spacecraft to land astronauts on the moon. A team of engineers, including Lau Tung Kwan, developed and built the LMs for Project Apollo at the Grumman Aerospace headquarters on Long Island, N.Y. The LM has two major stages: the descent stage to arrive on the moon, and the ascent stage to lift off from the lunar surface Astronaut Edwin "Buzz" Aldrin was the LM pilot during Apollo 11.

After the historic Apollo 11 moonwalk, astronauts Neil Armstrong and Buzz Aldrin returned to the LM, which lifted off into lunar orbit and docked with its companion CSM for the return journey to Earth. The only part of the spacecraft to reenter Earth's atmosphere was the Command Module, the Columbia. (https://www.discoverspace.org/exhibit/lunar-module/) (https://nssdc.gsfc.nasa.gov/nmc/spacecraft/display.action?id=1969-059C
https://airandspace.si.edu/collection-objects/command-module-apollo-11/nasm_A19700102000).

BEFORE READING

Prereading Focus Questions

(Reading Standards, Craft & Structure, Strand 5 and Integration of Knowledge & Ideas, Strand 7)
(Speaking & Listening Standards, Comprehension & Collaboration, Strands 1 and 2)

Before introducing this book to students, you may wish to develop background knowledge and promote anticipation by posing questions such as the following:

- What do you think persistence means? How is persistence important in life? What does it mean to have a goal?
- What kinds of qualities are important for a person to have if they want to achieve an important goal?
- What are your dreams? What kind of future do you imagine for yourself? What inspires you? What are your passions? Why do you have those dreams?
- As a hook for readers, consider showing students author Emeline Lee's video, "How to Build a Rocket" on the *Bonnie's Rocket* book page: youtu.be/-SmDkUhkwrQ.

Exploring the Book

(Reading Standards, Key Ideas & Details, Strand 1; Craft & Structure, Strand 5; and Integration of Knowledge & Ideas, Strand 7)
(Speaking & Listening Standards, Comprehension & Collaboration, Strands 1 and 2)

- Book Title Exploration: Talk about the title of the book, *Bonnie's Rocket*. Then ask students what they think this book will most likely be about and whom the book might be about. What do they think might happen? What information do they think they might learn? What makes them think that?
- Read Emeline Lee's Biography: Read about Emeline Lee on the jacket back flap as well as on her website https://www.emelinelee.com/. Encourage students to think about what it was like to write a children's book, and what could have been her inspiration for writing *Bonnie's Rocket*.
- Read Alina Chau's Biography: Read about Alina Chau on the jacket back flap as well as on her website https://alinachau.com/. Have students look at her illustrations for other books and compare and contrast her style across books. How are Alina's illustrations among the books similar? How are they different? Does it seem like the subject matter of a book influences the style of her illustrations? Why do you think so?
- Encourage students to stop and jot in their reading notebooks during the read-aloud when they: learn new information, see a powerful image, have an emotional reaction or an idea, have a question, or hear new words.
- Have students quickly write a feeling in their notebooks during reading. After reading, ask students why they wrote down that feeling and have them write a journal entry about it.

Setting a Purpose for Reading

(Reading Standards, Key Ideas & Details, Strands 1–3)

Have students read to find out:

- who inspires Bonnie and why
- how Bonnie's father plays a role in her life
- what perseverance looks like and how to persist through a challenge
- the importance of Bonnie's father contributions to rocket science and space exploration

Encourage students to consider why the author, Emeline Lee, would want to share this story with young people.

VOCABULARY

(Reading Standards, Craft & Structure, Strand 4)
(Language Standards, Vocabulary Acquisition & Use, Strands 4–6)
(Speaking & Listening Standards, Comprehension & Collaboration, Strands 1 and 2)

The story contains several content-specific and academic words and phrases that may be unfamiliar to students. Based on students' prior knowledge, review some or all of the vocabulary below. Encourage a variety of strategies to support students' vocabulary acquisition: look up and record word definitions from a dictionary, write the meaning of the word or phrase in their own words, draw a picture of the meaning of the word, create a specific action for each word, list synonyms and antonyms, and write a meaningful sentence that demonstrates the definition of the word.

Content Specific

NASA, Apollo 11, spacecraft, rocket launch, Space Center, Apollo 7, astronauts, orbit, Earth, ship, compass, protractor, tape measure, safety goggles, duct tape, slingshot, NASA, Stage 1, Stage 2, Stage 3, Stage 4, boost, fizzy, chemical reaction, Mission Control, t-minus, moon landing

Academic

magnificent, engineering, progress, successful, spectacular, discouraged, patience, pressure, jet, mist, eureka, billowing, extraordinary, long-awaited

AFTER READING

Discussion Questions

After students have read the book, use these or similar questions to generate discussion, enhance comprehension, and develop appreciation for the content. Encourage students to refer to passages and/or illustrations in the book to support their responses. **To build skills in close reading of a text, students should cite textual evidence with their answers.**

Literal Comprehension

(Reading Standards, Key Ideas & Details, Strands 1–3)
(Speaking & Listening Standards, Comprehension & Collaboration, Strands 1–3 and Presentation of Knowledge & Ideas, Strand 4)

1. How does the story begin? What is Bonnie designing?
2. Where is Bonnie's father?
3. What does Bonnie's father do for work? Why does he have to live away from home?
4. What did Baba give Bonnie before he left? What did she want to do with it?
5. What did Bonnie miss while Baba was away?
6. What does Baba tell Bonnie in his letter?
7. What are the different stages of *Bonnie's Rocket*?
8. What does Baba send Bonnie for Christmas?
9. How does Baba react to Bonnie's first rocket launch? What does he tell her?
10. What does Bonnie realize the rocket needs in Stage 4? How does she achieve this goal?
11. What happened after the blast? What does Baba write in his letter to Bonnie?
12. What event inspires Bonnie for a new idea with her rocket launch? What do she and her friends do next?
13. What happens during the Apollo 11 launch?
14. When does Baba come home? How does Bonnie react?

Extension/Higher Level Thinking

(Reading Standards, Key Ideas & Details, Strands 2 and 3 and Craft & Structure, Strands 4 and 6)
(Speaking & Listening Standards, Comprehension & Collaboration, Strands 1–3 and Presentation of Knowledge & Ideas, Strand 4)

1. After reading the book, what is the significance of the title *Bonnie's Rocket*?
2. What evidence in the book demonstrates Bonnie's dedication and passion?
3. How does Bonnie overcome the different obstacles as she designs her rocket? How does she use her friends and Baba to help her achieve her goal in launching her own rocket? How does she use her creative thinking skills to overcome the challenges as she's designing her rocket?
4. What were some examples of Bonnie's problem solving throughout the story? How did she come up with solutions to things that weren't working with the rocket?
5. What are some of the characteristics of Baba and Bonnie's relationship? How do you think Bonnie's father inspires her? Use evidence from the story.
6. How did Baba support Bonnie? What were some of the things that Baba did to inspire her creativity? Why is it important to recognize and support other people's passions?
7. What is the role of community and collaboration in helping Bonnie create her rocket?
8. How does Baba teach life lessons to Bonnie? What are different ways that he explains problem

solving and creativity to her? How do you think this affects Bonnie?

9. What role do the illustrations play in the story? How does the artwork demonstrate the story's message and themes? How does the illustrator show emotion and feeling through her artwork?

10. Explore the structure of this text. Does the story describe events chronologically, as comparison, cause and effect, or problems and solutions? Why do you think the author structured the text the way she did? Why do you think she decided to include letters from Baba as a major part of the narrative? How does this story compare to other texts you have read?

Reader's Response

(Writing Standards, Text Types & Purposes, Strands 1–3 and Production & Distribution of Writing, Strands 4–6)

Use the following questions and writing activities to help students practice active reading and personalize their responses to the book. Suggest that students respond in reader's response journals, essays, or oral discussion. You may also want to set aside time for students to share and discuss their written work.

1. What do you think is the author's message to the reader? Think about possible motivations behind Lee's intentions to write the book. What do you think she wanted to tell young readers?

2. Have students make a text-to-self connection. What kind of connections did you make from this book to your own life? What do Bonnie's experiences, thoughts, and feelings mean to you? Do you have a dream that is meaningful to you? What forms of expression do you use to showcase your dream?

3. Have students make a text-to-text connection. Did you think of any other books while you read *Bonnie's Rocket*? Why did you make those connections?

4. Have students make a text-to-world connection. What kind of connections did you make from this book to what you have seen in the world or on the news? Why did *Bonnie's Rocket* make you think of that?

5. How has reading *Bonnie's Rocket* influenced your understanding of what it takes to make a rocket? How does it differ from what you've read in other books or seen on television or movies? What did you learn from *Bonnie's Rocket*?

6. Have you had a grandparent, a teacher, or an elder that has had an impact on your life? What did they teach you? How did you show them respect? What kind of stories did they tell you? How are they meaningful to you?

7. Read Emeline Lee's Author's Note in the back of the book. What does she tell young readers who engage with *Bonnie's Rocket*? Does her note help you understand the story in a new way?

ELL Teaching Activities

(Speaking & Listening Standards, Comprehension & Collaboration, Strands 1–3 and Presentation of Knowledge & Ideas, Strands 4–6)
(Language Standards, Vocabulary Acquisition & Use, Strands 4–6)

These strategies might be helpful to use with students who are English Language Learners.

1. Assign ELL students to partner-read the story with strong English readers/speakers. Students can alternate reading between pages, repeat passages after one another, or listen to the more fluent reader.
2. Have each student write three questions about the story. Then let students pair up and discuss the answers to the questions.
3. Depending on students' level of English proficiency, after the first reading:
    - Review the illustrations in order and have students summarize what is happening on each page, first orally, then in writing.
    - Have students work in pairs to tell what they learned about one of the spreads. Then ask students to write a short summary, synopsis, or opinion about what they have read.
4. Have students give a short talk about what they learned from *Bonnie's Rocket* and how it made them think differently about space exploration.
5. Have students illustrate a goal or dream of their own they have.
6. Have students give a short talk about what they think the message of the story is.
7. The book contains several content-specific and academic words that may be unfamiliar to students. Based on students' prior knowledge, review some or all of the vocabulary. Expose English Language Learners to multiple vocabulary strategies. Have students make predictions about word meanings, look up and record word definitions from a dictionary, write the meaning of the word or phrase in their own words, draw a picture of the meaning of the word, list synonyms and antonyms, create an action for each word, and write a meaningful sentence that demonstrates the definition of the word.

Social and Emotional Learning

(Reading Standards, Key Ideas & Details, Strands 1-3 and Craft & Structure, Strands 4-6)
(Speaking & Listening Standards, Comprehension & Collaboration, Strands 1–3 and Presentation of Knowledge & Ideas, Strand 4)
(Writing Standards, Text Types & Purposes, Strands 1–2 and Production & Distribution of Writing, Strands 4–6)
(Language Standards, Vocabulary Acquisition & Use, Strands 6)

Social and emotional learning involves being aware of and regulating emotions for healthy development. In addition to understanding one's own feelings, strong socio-emotional development allows individuals to develop empathy for others and to establish and maintain relationships.

Use the following prompts to help students study the socio-emotional aspects of this book.

1. Bonnie misses Baba during the story. Why do you think she misses him? Have you ever missed an adult in your life? How did that make you feel? How did you cope with your feelings of sadness?
2. Baba writes letters to Bonnie throughout the story, encouraging her and letting her know that

he misses and loves her. How do you think these letters make Bonnie feel? Write a letter to someone that you love. What do you want to tell them?

3. In what ways was Bonnie able to demonstrate persistence and resiliency to reach her goal? What about her father? How were their journeys similar? How were they different?

4. Write an essay or personal piece about a time that you had to persist and overcome obstacles to achieve a goal. Bonnie experiences a lot of setbacks during her rocket design and launch. Have you ever experienced something like Bonnie? What happened? How did you overcome the challenges? How did you use creative thinking to achieve your goal? Students can share with a partner, small group, or whole class.

5. How does *Bonnie's Rocket* show positive family relationships? What are the qualities of a positive family relationship? What are the ways that Baba and Bonnie interact with one another? What are the different ways that they show respect to one another? Students can brainstorm ideas on chart paper that can be presented and accessible for the whole class. Alternatively, students can create a word cloud and see what qualities come up the most and are the largest (https://www. wordclouds.com/).

6. Which illustration in *Bonnie's Rocket* best shows an emotion? Explain which emotion you think it is. How does it portray that emotion?

7. Choose an emotion that interests you: happiness, sadness, fear, anxiety, frustration, hope, perseverance and so on. Illustrate or act out what that emotion looks like in *Bonnie's Rocket*.

INTERDISCIPLINARY ACTIVITIES

(Introduction to the Standards, page 7: Students who are college and career ready must be able to build strong content knowledge, value evidence, and use technology and digital media strategically and capably)

Use some of the following activities to help students integrate their reading experiences with other curriculum areas. These can also be used for extension activities, for advanced readers, and for building a home-school connection.

English/Language Arts

(Reading Standards, Key Ideas and Details, Strands 1–3, Craft and Structure, Strands 4–6, Integration of Knowledge & Ideas, Strands 7–9, Range of Reading of Text Complexity, Strand 10)
(Writing Standards, Text Types & Purposes, Strands 1–3, Production & Distribution of Writing, Strands 4 and 6, Research to Build & Present Knowledge, Strands 7–9, Range of Writing, Strand 10)
(Speaking and Listening Standards, Comprehension and Collaboration, Strands 1–3, Presentation of Knowledge and Ideas, Strands 4–6)

- **How was reading a picture book different from reading a newspaper article about the Apollo 11 Launch?** Have students read the article from National Geographic Kids, "The Moon Landing." Then, students can create a Venn Diagram with the headings, "Picture Book: *Bonnie's Rocket* and "The Moon Landing" (https://kids.nationalgeographic.com/history/article/moon-landing). Students can compare the different formats of the texts and the information they learned in both. What was it like to read a picture book with Bonnie's experiences about the moon landing versus an online article? What are the benefits to both formats?

- **Have students conduct a study on picture books that use letters as part of the**

story. Ask students the following questions as they're examining the books: how do the letters add to the story? Why do you think the author chose to include letters as a major part of the plot? How did it affect your reading of the story? Students can work with their school or local librarian on curating a collection of picture books that feature letters. Afterwards, have students write a letter of their choosing inspired by the picture books featured in the letter writing unit. Consult Reading Rockets' list for more title recommendations (https://www.readingrockets.org/booklist/letter-writing).

- **Conduct a unit on letter writing. Reading Rockets' "Introduction to Letter Writing"** (https://www.readingrockets.org/article/introduction-letter-writing) **provides tips and suggestions on how to incorporate letter writing into your curriculum.** During the unit, have students reflect on how writing and receiving letters makes them feel. How did Baba's letters in *Bonnie's Rocket* make her feel and give her inspiration for her rocket design? How were letters critical to their relationship? Afterwards, have students write a letter to a loved one, whether it's a family member, friend, or another special person in their life. What do they want to tell them? What's the purpose of the letter? Readwritethink.org also has additional resources and lesson plans designed to teach students authentic letter writing (https://www.readwritethink.org/classroom-resources/lesson-plans/mail-using-literature-promote).
- **Tell students to imagine they will be interviewing Bonnie's father, Baba, for a local newspaper or talk show.** Ask students to develop a list of five interview questions they want to ask. What do they want to learn about the Apollo 11 launch? How did he develop the spacecraft? Why did he want to become an engineer? Lead a class discussion, creating a combined list of questions and then narrowing that list down to ten questions.
- **Generate a discussion about how we learn about the past.** When students volunteer that we read books, ask them about other ways to learn about history, such as songs, poems, interviews, or family stories. Discuss oral histories and interviews as a way to learn about times and events. Have students use oral histories to find out more about their own family history. *Bonnie's Rocket* was inspired by author Emeline Lee's own grandfather. Why do you think she wanted to share this family story with young readers? Reference the video interview author Emeline Lee provided with her grandfather for context on writing *Bonnie's Rocket*: https://youtu.be/gLSSkwl2VdU
- **How has a family member or friend close to you impacted your life?** Baba is Bonnie's mentor and has a positive impact on her life, even in the short period that we get to see together in the story. Have you had a family member or other person who really changed your life? What were some things that person did that were significant to you? Students can write a poem, essay, or display their work in any other visual format that works best for their learning needs.
- **Come up with questions to interview the author, Emeline Lee.** What was her process behind creating *Bonnie's Rocket*? What was her inspiration for writing a story about Bonnie, her grandfather, and space exploration? Read the Author's Note with students and have them discuss what they learned and how it made them think about the book differently. Why did she write this book for young readers? Consider reaching out to Emeline Lee for a virtual author visit (https://www.emelinelee.com/).

Social Studies/Civics

(Reading Standards, Key Ideas and Details, Strands 1–3, Craft and Structure, Strands 4–6, Integration of Knowledge & Ideas, Strands 7–9, Range of Reading of Text Complexity, Strand 10)
(Writing Standards, Text Types & Purposes, Strands 1–3, Production & Distribution of Writing, Strands 4 and 6, and Research to Build & Present Knowledge, Strands 7–9, Range of Writing, Strand 10)
(Speaking and Listening Standards, Comprehension and Collaboration, Strands 1–3, Presentation of Knowledge and Ideas, Strands 4–6)

- **Design a lesson or unit on the impact of Apollo 11.** Have students research Apollo 11 and the impact that it had on space exploration. How did it affect space exploration for years to come after the mission? The American Museum of Natural History's "The Scientific Legacy of the Apollo 11 Mission" (https://www.amnh.org/explore/news-blogs/news-posts/the-scientific-legacy-of-the-apollo-11-mission) provides additional facts and resources about this groundbreaking and revolutionary space journey. Consult NASA's Next Giant leap page dedicated to Apollo 11 and the Future of Human Exploration (https://www.nasa.gov/apollo45/#.U816W7QufAw). Divide students into groups and have them create informational posters detailing the information they find. Students can answer the following guiding questions: What was the Apollo 11 mission? What scientists were involved with Apollo 11, both with its creation and flying into space? How did Apollo 11 affect space exploration after the mission concluded? Students should prepare a bibliography and cite their resources throughout the project. The Brooklyn Public Library has lesson plans and resources dedicated towards teaching students how to create bibliographies (https://www.bklynlibrary.org/sites/default/files/documents/Citing%20Sources.pdf).

Science/STEM

((3-PS2-1 Motion and Stability: Forces and Interactions
Plan and conduct an investigation to provide evidence of the effects of balanced and unbalanced forces on the motion of an object.)
(MS-PS3-4: Energy: Plan an investigation to determine the relationships among the energy transferred, the type of matter, the mass, and the change in the average kinetic energy of the particles as measured by the temperature of the sample)
(MS-PS2-1 Motion and Stability: Forces and Interactions
Apply Newton's Third Law to design a solution to a problem involving the motion of two colliding objects.*)

- **Encourage students to learn about how rockets are created from NASA scientists from their Rocketry page on their website** (https://www.nasa.gov/audience/foreducators/rocketry/lessonplans/index.html#.Y0fNXezMLt0). NASA also has a lesson plan on Simple Rocket Science (https://www.nasa.gov/stem-ed-resources/simple-rocket-science.html) for additional ideas. Afterwards, students can think about and answer the following questions: what did they learn about the construction of rockets? What kind of work goes into a rocket launch? How do scientists work together to build these rockets? What kinds of different scientific elements and elements of physics are involved with the construction of the rocket and eventual rocket launch? Students can discuss their findings with a small group and share their responses with the class.

- **Have students build their own rockets, using inspiration from author Emeline Lee's video, "Build Your Own Rocket"** (https://www.emelinelee.com/video-tutorial)**.** With materials from the classroom and following the instructions from Emeline Lee's videos, have students make their own rockets. Students should create these rockets and then launch them outside, following all school safety protocol and measures. For additional resources and lesson plan, consult National Geographic Kids' "Make Your Own Rocket" (https://www.natgeokids.com/uk/primary-resource/make-rocket-primary-resource/). Students can work individually,

with a partner, or a small group. As students are working on the rockets, encourage them to think about Bonnie's process. Students can write an essay after the experience about what it was like to make a rocket and what they learned about scientific principles that are involved with a rocket launch.

- **Learn about the scientific principles–including elasticity, potential and kinetic energy, and Newton's third law of motion, "For every action, there is an equal and opposite reaction,"–behind *Bonnie's Rocket* launch attempts on author Emeline Lee's website:** https://www.emelinelee.com/scientific-principles
- **Have students research other famous AAPI space engineers and scientists.** Baba is inspired by author Emeline Lee's grandfather, Lau Tung Kwan, who worked as an engineer for the Apollo 11 mission. To learn more about the incredible accomplishments of AAPI astronauts and scientists, consult NASA's page (https://www.nasa.gov/feature/asian-american-native-hawaiian-and-pacific-islander-heritage-month/) as well as the San Diego Air and Space Museum's "Asian Americans in Aviation" (https://sandiegoairandspace.org/exhibits/online-exhibit-page/asian-americans-in-aviation). Have students select a scientist and conduct additional research on that person: what are they known for? How have their accomplishments changed the world of space exploration?
- **Encourage students to conduct a research study on the different stages that are part of *Bonnie's Rocket* launch.** Have students create a graphic organizer with 4 different columns dedicated to each stage: Stage 1, Stage 2, Stage 3, and Stage 4. What happened during each stage in the story? What scientific elements were involved in each stage? How was each stage important to the rocket launch? Afterwards, students can create posters or other ways to demonstrate the different stages with photographs and pictures for reference.
- **Consult NASA Classroom Content & Lesson Plans for additional ideas on how to incorporate space exploration into your curriculum** (https://www.nasa.gov/langley/education/classroom). NASA has a variety of educational resources, lesson plans, activity suggestions, and information designed to inspire students to learn about NASA, space exploration, and bring the wonder of space to students.

Art & Media

(Reading Standards, Key Ideas and Details, Strands 1–3, Craft and Structure, Strands 4–6, Integration of Knowledge & Ideas, Strands 7–9, Range of Reading of Text Complexity, Strand 10)
(Writing Standards, Text Types & Purposes, Strands 1–3, Production & Distribution of Writing, Strands 4 and 6, Research to Build & Present Knowledge, Strands 7–9, and Range of Writing, Strand 10)
(Speaking and Listening Standards, Comprehension and Collaboration, Strands 1–3, Presentation of Knowledge and Ideas, Strands 4–6)

- **Have students design their rocket from the Science/STEM section of this guide.** Provide students with relevant materials from their classroom to decorate their rocket. What do they want the rocket to look like? Afterwards, students can share their final rockets with the whole class.
- **Ask students to write a poem or other writing piece inspired by** *Bonnie's Rocket* **about a cause they care about or dream they have.** Bonnie loved designing and launching her rocket during the story. What dreams or passions do students have like Bonnie? Encourage students to have their poem reflect their personal experiences and/or their feelings

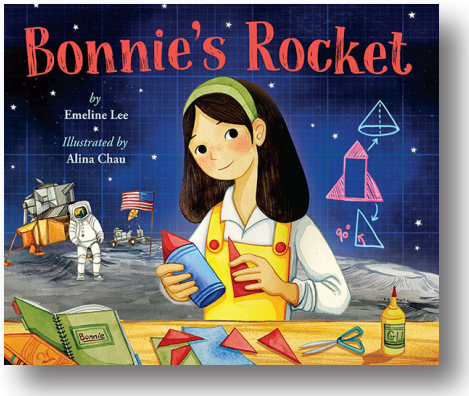
and opinions. Have students perform their work. Refer to ReadWriteThink.org (http://www.readwritethink.org/parent-afterschool-resources/tips-howtos/help-child-write-poem-30317.html?main-tab=2) for more ideas and details.

- **Encourage students to select the illustration that resonated with them the most from *Bonnie's Rocket*.** Have students write a reflection about the illustration. What stood out to them? How did the illustration make them feel? What did the illustration make them think about?
- **Come up with questions to interview the illustrator, Alina Chau.** What was her process behind creating the art for *Bonnie's Rocket*? How did she use the story as inspiration for her artwork? What connections does she have to space exploration? What did she learn about from the story? How long has she been creating art, and when did she realize she wanted to become an illustrator? Consider reaching out to Alina Chau for a virtual illustrator visit (https://alinachau.com/).

School-Home Connection

(Reading Standards, Integration of Knowledge and Ideas, Strands 7 and 9)
(Writing Standards, Text Types & Purposes, Strands 1-3, Production & Distribution of Writing, Strand 4, and Research to Build & Present Knowledge, Strands 7-9, Range of Writing, Strand 10)
(Speaking and Listening Standards, Comprehension and Collaboration, Strands 1-3, Presentation of Knowledge and Ideas, Strands 4-6)

- **Ask students to create portraits of people who are their personal role models through drawing, collage, or photograph.** In writing, students should describe what actions and qualities they admire about this person. What did they learn from them? What do they admire about them, and how do they inspire them in their own lives? How can they reflect that through their art and writing?
- **If applicable, have students interview family members and friends who were alive during the Apollo 11 moon landing.** Have students ask family members and/or friends: what was it like to be alive for the Apollo 11 moon landing? What do they remember about the Apollo 11 moon landing? How did they find out about the news? How did it impact their feelings and knowledge about space exploration? For reference, show Emeline Lee's interview with her grandfather for *Bonnie's Rocket*: https://youtu.be/gLSSkwl2VdU
- **If possible, have students create their own rocket at home with their family members and caregivers.** If students and caregivers want to create their own rockets at home with materials from the Background section of this guide, have students share their experiences with their class. What was it like to create another rocket? What did they learn the second or third time constructing a rocket? How did their family members and caregivers react?



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ABOUT THE AUTHOR

Emeline Lee grew up hearing stories about her grandfather's work on the Apollo 11 moon landing, which inspired her own fascination with science. She studied English literature and environmental sustainability at Columbia University, and she now works in the renewable energy sector in New York City. This is her first picture book. Find her on the web at emelinelee.com and follow her on social media at @EmelineLeeBooks.

ABOUT THE ILLUSTRATOR

Alina Chau dreamed of being an astronaut when she grew up, but instead went on to a career as an award-winning artist and filmmaker. She illustrated *The Nian Monster*, which received the 2018 APALA Picture Book Honor, alongside many other beautiful picture books. Her animation credits include *Star Wars: The Clone Wars* and numerous best-selling games. She lives in southern California. Visit her website at alinachau.com and find her on Instagram at @alinachau.

REVIEWS

"An engaging father-daughter STEAM story full of support and scientific inquiry." *–Kirkus Reviews*

"Awaiting the return of her father, Baba, an engineer for NASA's Apollo 11 space program, a child endeavors to make a functional toy rocket in this teachable story."*–Publishers Weekly*

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