

The book cover features a large, detailed illustration of the moon in the center. Surrounding the moon are various space-related elements: a rocket with orange and white segments and a yellow flame trail flying across the top; a lunar lander with two legs and a small structure on the left; an astronaut in a white suit with a NASA logo on the chest floating on the right; and a girl with long brown hair and large round glasses in the foreground, wearing an orange shirt and resting her chin on her hand. The background is a dark blue space with white stars and faint mathematical equations like $x = \frac{b}{a}$ and $r_1 = \sqrt{D^2 + 3}$. A dashed white circle frames the moon and the surrounding elements.

MARGARET AND THE MOON

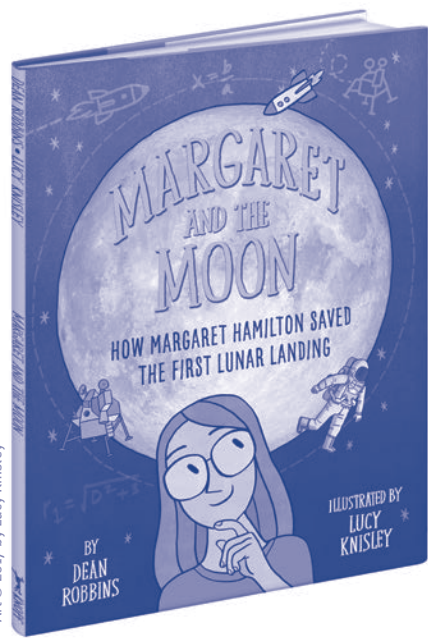
HOW MARGARET HAMILTON SAVED
THE FIRST LUNAR LANDING

BY
DEAN
ROBBINS

ILLUSTRATED BY
LUCY
KNISLEY

MARGARET AND THE MOON

EDUCATORS' GUIDE



ABOUT THE BOOK

Margaret was a curious young girl with big dreams. By studying hard, asking lots of questions, and mastering computer coding, she made her way to NASA. There, it is Margaret's job to figure out how to get astronauts to the moon by anticipating and solving any problems they might encounter on the journey. And when there is a problem on board the *Apollo 11* lunar module, it is Margaret's creativity, preparedness, and dedication that save the astronauts and lead to a successful landing.

This inspiring story of an extraordinary girl is sure to show your students that with hard work and passion they can do anything!

PRE-READING ACTIVITY

Give each student ten index cards. Introduce and discuss the meaning of each of the following words from the book: *software engineer*, *NASA*, *astronaut*, *code*, *Apollo 11*, *lunar landing*, *lunar module*, *overload*, *universe*, and *control room*. Write these words on the board and ask students to write them on the front of their index cards. Have them draw a picture on the back of the cards that will remind them of the meaning of the word. Secure all the cards with a ring clip and have students keep the cards near them during the classroom activities.

Correlates to Common Core Language Arts Anchor Standards for Informational Text 4

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$$x = \frac{b}{a}$$

CLASSROOM ACTIVITIES

Shark Tank

Become an inventor! Ask students to think of a problem that they encounter regularly. Then have them come up with a solution that no one has ever thought of before. Students should develop a presentation that demonstrates their problem and solution. They can use drawings, poster-board displays, or even build prototypes to illustrate their ideas. Invite school administrators into the classroom to listen to the presentations and "invest" in the student projects.

Correlates to Common Core Language Arts Anchor Standards for Speaking and Listening 4

And the Award Goes To . . .

Margaret is an amazing woman who has so many admirable traits. Set the scene for an awards ceremony in your classroom. Ask each student to think of one thing that Margaret has done that deserves an award. Is it that she excels at math? Is she a superior software engineer? Is it that she saved the *Apollo 11* mission? Have students create an award that they would want to present to Margaret and a speech explaining their decision. They can bring in materials from home or use materials in the classroom. Then host an awards ceremony where each student presents their award and speech. Place all of the awards in a display case, along with a plaque with the award's name, for everyone to see.

Correlates to Common Core Language Arts Anchor Standards for Writing 1

Apollo 11

The *Apollo 11* mission changed history. Show your students a video clip of the lunar landing and emphasize how monumental that moment was for America. You can even invite someone who watched the landing on TV into the classroom to talk about what it felt like to see someone walk on the moon. Then ask students to choose one of the following topics to learn more about: the crew, the launch, the moon landing, walking on the moon, driving on the moon, the return to Earth.

Ask students to research their topic using the Internet and books, and then create a visual aid that illustrates what they learned. They can present their finished aid to the class. Create a classroom display showing all the posters.

Correlates to Common Core Language Arts Anchor Standards for Writing 2

Constellation Concentration

Explore the night sky together! First, explain the meaning of *constellation*: a group of stars that form a recognizable pattern that is traditionally named after its apparent form or identified with a mythological figure. Then show your students images of commonly seen constellations, such as Ursa Major and Ursa Minor. Finally, ask them to create their own constellations. Give each student a sheet of graph paper and have them use a black marker to draw stars at various points to create a recognizable pattern. When they are finished, lay the graph paper on top of a black piece of construction paper and punch holes through each star with a pin. Create a night sky by turning the lights off and holding the black paper in front of a flashlight. Each student can explain their constellation and name it.

Correlates to Common Core Language Arts Anchor Standards for Speaking and Listening 5

Build a Lunar Module

Show your students photos of the *Apollo 11* lunar module. You can use the illustrations from the book as well as photos from the Internet. Be sure to point out important components that are essential for space travel. Then ask students to design their own lunar module! Their blueprint designs should include answers to the following questions:

- Where do the astronauts sit?
- What will support the module as it lands?
- How will the astronauts communicate with the control room?
- How will the module blast off from the moon to return to Earth?

Once their blueprint has been approved by "NASA," have them build the lunar module using marshmallows (large and small), toothpicks, and any other materials they can find. When they are finished, test their lunar module by landing it on the moon—a soccer ball!

Correlates to Common Core Language Arts Anchor Standards for Informational Text 7



RHTeachersLibrarians.com



Guide prepared by Jamie Simon, an educational consultant in the Washington, DC, area, who has been involved in education for over fifteen years as both a teacher and an administrator.

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WHO IS MARGARET HAMILTON?

Write as many words or phrases as you can to complete these sentences. Then complete the sentences at the bottom of the page.

MARGARET HAMILTON



Art © 2017 by Lucy Knisley

CAN . . .

IS . . .

HAS . . .

--	--	--

Margaret Hamilton made me laugh when _____.

Margaret Hamilton surprised me when _____.

Margaret Hamilton made me feel _____ because _____.

Margaret Hamilton inspired me to _____.

If I met Margaret Hamilton, I would say _____.

BREAKING NEWS

Imagine that it is July 20, 1969, and *Apollo 11* just landed on the moon. Become a journalist and write and illustrate a news article about this historic event. Be sure to answer these questions: Who? What? Where? When? Why? How?

(Article title)

(Byline—your name)

CAPTION:

CAPTION: