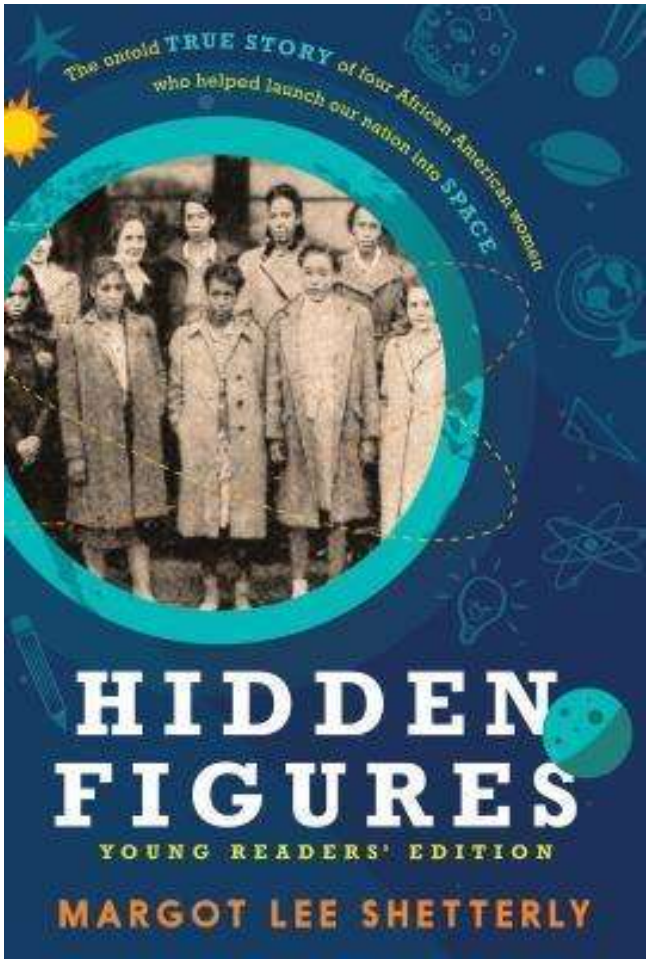
Hidden Figures

Young Readers Edition

By Margot Lee Shetterly



When we think of the early achievements of NASA and the first moon landing, we often focus on the accomplishments of the astronauts or lead engineers. However, these missions required teams of thousands of scientists and mathematicians to ensure their success. *Hidden Figures* is the true account of four female, African-American "human computers" (mathematicians) who contributed to the early space program despite the many obstacles and prejudices they endured because of their race and gender.

About the Author

Margot Lee Shetterly is a nonfiction author and entrepreneur. Her first book, *Hidden Figures*, was inspired by her experience growing up in Hampton, Virginia, around many of the women featured in the book. In addition, she founded the Human Computer Project, an effort to identify the achievements of all the women who worked for the NACA and NASA during the 1930s to the 1980s.

Getting Started

You can find *Hidden Figures* at your local or school library, or at local or online bookstores. It's also available as an ebook.

A Special Note to Readers

In *Hidden Figures* Margot Lee Shetterly depicts the racial segregation and unequal opportunities that African Americans faced during the book's time period. Throughout the book, African Americans are sometimes referred to as "negro" or "colored" because these were common terms used at that time. Today those terms are considered offensive, and we instead use 'African American' or 'Black.' Throughout these activities, the older terms are only used when quoting directly from the book or in historical reference materials from the time period. Elsewhere we have endeavored to use language that is considered respectful today.

While You're Reading

Every good story is full of captivating characters, timeless and timely themes, significant settings, pivotal plot points, and vivid vocabulary that combine to engage our brains and our hearts. In this section of the website, you will find activities that invite you to dig deeper into each of these literary elements for a better understanding and enjoyment of the book.

To aid your investigation, save our "Writing While You Read" guide (see pages 19 and 20), with helpful tips on keeping a reading journal and annotating a book while you read.

Respond to the following prompts in your reading journal as you read (or re-read!) Part I (pages 1 – 101) of *Hidden Figures:*

- The title of a book is the first thing a reader sees when choosing a book. Titles are an important way for the reader to get an idea of what the book is about.
    - Why do you think the author and publisher chose the title Hidden Figures for the book?
    - Why do you think that they chose the word "figures" instead of women or mathematicians? What does this word represent?
- Before chapter 1 of the book, the author includes a prologue. A prologue is an introduction to a book that usually gives background information about the text.
    - Why do you think the author, Shetterly, thought it was important for *Hidden Figures* to have a prologue?
    - What information does the author give in the prologue that helps you better understand the book?
    - How is the point of view of the prologue different from the rest of the book? Why do you think the author chose to write it this way?
- The key way a writer helps his or her readers connect with a story is through its characters. Which qualities, behaviors, and choices do you think make some characters more appealing than others?

To help you answer this question with specific evidence from the book, use the Character Grid you'll find on pages 21 and 22 below (and you can make extra copies of page 22 if you need them). Tuck it inside your book, and, each time you meet a new character, take a minute to jot down the name and your initial observations about him or her on your Character Grid. Be sure to revisit your Grid every few chapters or so, too! There may be more ideas you want to add as you get to know each character better.

- The women of *Hidden Figures* had to abide by segregation laws while living in the south. On page 7 the book lists many of these laws. Pick two of these laws and write about how they affected the lives of the women of the West Computer Wing. Give specific examples from the text as you read.

- During World War II, the United States government began investing more in the research and development of aircraft. "World leaders felt that the country that ruled the skies would win the war" (11).

    - Why was the aircraft industry such an important factor in winning the war?
    - Write three examples of contributions that scientists, engineers or mathematicians made at the NACA to help with the war effort.

- In chapter 5, the author discusses that during World War II many African Americans adopted the idea of double victory. They believed they needed to defeat not only enemies overseas, but also the prejudices and unfair laws that oppressed them in their own country. "Dorothy Vaughan understood the importance of the Double V… By accepting her post as a mathematician, she believed she was working towards both goals" (36).

    - How did Dorothy Vaughan and the other female mathematicians contribute to the success of the U.S. in the war?
    - How did Dorothy Vaughan and the other African American female mathematicians in the West Computing Wing help in the civil rights movement?

- In 1947, Dorothy Hoover, "was the first African-American woman to leave the computing pool and get a chance at a research job, working directly for an engineer" (73).

    - Why do you think Dorothy Hoover was chosen to work directly with engineers on a research team?
    - What made this promotion so important, and how did it inspire other African American female mathematicians at Langley?

- In the early 1950's, at the height of the "Cold War" with Russia, people feared that communists who lived in America were plotting to overthrow the government. "Suddenly, Americans were afraid that there might be spies all around them, even in their neighborhoods or at work" (84).

    - What occurred at Langley that related to the Rosenberg trial? How did the FBI handle the communist threat at the NACA?
    - How did President Truman want to deal with Communism? How did this affect the working environment at Langley?

Respond to the following prompts in your reading journal as you read (or re-read!) Part 2 (pages 102 – 198) of *Hidden Figures*:

- Katherine Goble's first job at Langley was to research a small propeller plane crash. "The research done by Katherine and the engineers on the team led to changes in air traffic regulations" (105).
    - Why were Katherine's calculations so important to the team's discoveries?
    - How does this section of the book, "A Bumpy Ride" (104-105), show the importance of math and the science of flight? Give specific examples from the text.

- In 1957, the Russians "created a satellite and launched it into orbit" (123), thereby beating the U.S. into space. The launching of Sputnik propelled the U.S. to increase its research and resources devoted to space exploration.
    - What examples from the text show how Russia's success with Sputnik advanced space research at Langley?
    - How did this change in focus affect the female computers like Katherine Johnson?

- When West Computing was officially dissolved in 1958, "it meant the end of Dorothy's career as a manager" (138).
    - Why was West Area Computing closed?
    - How did Dorothy feel about the closing?
    - How did she respond to the new challenges she faced at Langley (page 164)?

- In 1958, NASA began designing the first space mission, Project Mercury. To accomplish this mission, "the engineers approached Project Mercury by breaking it down into its constituent parts" (148). Each team of engineers focused on a different aspect of the project.
    - Why did the engineers break down the work on project Mercury in this way?
    - How did Katherine Johnson's work fit into this approach?

- Levi Jackson, Mary Jackson's son, was the first African American to win the Hampton Roads area's soap-box derby. Mary Jackson was very proud of her son because she believed in, "achievement through hard work, social progress through science" (158). How do the women of *Hidden Figures* demonstrate this quote throughout the book? Give specific examples.

- Before going on the first orbital flight on the Mercury spacecraft, astronaut John Glenn had doubts about the calculations that the electronic computers had produced, so he said, “Get the girl to check the numbers” (178). The “girl” he was referring to was Katherine Johnson.
    - Why did John Glenn want Katherine to check the numbers instead of another engineer or human computer?
    - Why was this request so significant for Katherine’s career?

Getting to the Root

English is a living language. It changes and grows all the time. One of the best ways to understand the history of the English language and to unlock the meanings of unfamiliar words is to learn Latin and Greek word parts. As you study biology, you will learn more and more of these word parts, and once you know them, you will begin to recognize them in all kinds of words—and you'll find that your knowledge of those word parts will help you decipher the meanings of unfamiliar words.

Roots are the "base" of plants, and Latin and Greek roots form the base of many English words. For example, the Latin root *audi* means “to hear.” How many modern English words can you think of that include the root *audi*?

Next, take a look at each word part below. Beside each part is a word from *Hidden Figures* containing that word part. You can find the word in context on the page number in parentheses.

- ***arithm*** – ***arithm***etic (5)
- ***gen*** – ***gen***eration (7)
- ***liter*** – ***liter***acy (8)
- ***soph*** – ***soph***isticated (11)
- ***mod*** – ***mod***est (19)
- ***theor*** – ***theor***etical (89)

1. Can you determine the meaning of the root from your knowledge of the word beside it?
2. If not, think of other words that you know that also contain that root. What do those words have in common? Based on that common element, can you figure out the meaning of the root?
3. If you're still stumped, check out this list of Latin and Greek roots.
4. Now that you know the meaning of the root, how many words can you generate that use the root?
5. Once you understand the meaning of the root, you'll find that even your understanding and appreciation of familiar words will deepen and grow when you think about how that root works in those words.

Words, Words, Words

Hidden Figures is full of great words. Below is a list of some of the words from the book that may be unfamiliar to you, along with the page number on which each word appears in the story. Be sure to follow the steps below for other words in the book that are new to you.

- opportunity (24)
- ration (27)
- boarder (32)
- facilities (38)
- establishment (38)
- empowered (43)
- stereotypes (46)
- frugal (66)
- clearance (79)
- anxious (80)
- obsolete (113)
- dominate (121)
- dissemination (136)
- incomprehensible (141)
- constituent (148)
- quantified (151)
- temperamental (173)

Before you look these words up in a dictionary—or ask someone what they mean—try working through the following steps:

1. Generate a list of other words that share one or more of the same word parts. What do the words on the list have in common? Are there any clues from those commonalities that you can use to help figure out the meaning of the unknown word? Hint: Some word parts—as they appear in English words—have multiple meanings as we look back at the Latin and Greek, in part because of changes that have occurred in the words over the years. For example, does the "ped-" in "pedestrian" mean the same thing as the "ped" in "pediatrician"? Where there is possible confusion, or when you don't see familiar word parts, context clues (see step 2) are extremely important.
2. Go back and reread the word in its context. This context includes the sentence in which you find the word, but you should also read one or two sentences both before and after the appearance of the word. What context clues do you find that might unlock the meaning of the word for you?
3. Make your best guess at the meaning of the word.
4. Look up the definition in a dictionary. Be sure to also look for information about the word's origin. This information will often contain the Latin or Greek word from which the word is derived.
5. How close was your guess?

Explore

Our world is full of connections—between people, places, and events. In this section of the website, you will find activities that uncover some important connections—in aerospace engineering, math, computer science, and history — between *Hidden Figures* and our world.

Landing on the Moon

On May 26, 1961, President John F. Kennedy spoke to Congress and said, "I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the moon and returning him safely to Earth" (169). This speech gave NASA and all the workers at Langley, including the female computers, a clear mission. Eight years later they achieved this mission and changed history forever.

Activities

Click on the links below to learn more about the first moon landing.

- Read facts about the first moon landing.
- Watch a video of Charlie Duke, the astronaut who worked in mission control during the Apollo 11 mission and was the direct communicator (CAPCOM) between the spacecraft and the earth.
- Explore the surface of the Earth's moon with this interactive activity.
- Read about JoAnn Morgan an instrument controller, who was the only woman in the control room during the Apollo 11 Mission.
- Listen and watch the actual Apollo lunar landing happen in real time from the point of view of the astronauts on board.
- Experience a mission to the moon with this virtual interactive. (requires Flash player)
- Take a quiz to test your knowledge of the Earth's moon.

Reflection Questions

- How has the science of flight and space exploration been important to our history as a country?
- How would the 1940s through the 1960s have been different if the NACA had not been created?

Human Computers

We use modern computers constantly in our everyday lives. We talk on the phone, play video games, navigate our way to a new place, all with the help of these devices and the constant calculations that they make. However, before these computers were invented, scientists and engineers relied on humans to make calculations. Many of the "human computers" at the NACA/NASA were women. In *Hidden Figures*, we learn about a few of these amazing female mathematicians. Click the links below to explore even more about other female computers who advanced scientific innovation from the 1930's to the 1970's.

Activities

- Read more about female human computers from NASA.
- Discover the contributions of the female computers at the NACA/ NASA from 1935 to the 1970's in this short video.
- Search for more information on the female computers you learned about in the book on the Human Computer Project site that was created by the author, Margot Lee Shetterly, to highlight the successes of women computers at NASA.
- Watch a video about Katherine Johnson, her life and accomplishments.
- Investigate primary resources from the West Computer area at Langley using this interactive map.
- Explore a timeline of computer history that shows how the digital computer evolved over time.
- Learn more about one of the IBM computers that NASA used during the time of the book.

Reflection Questions

- Why is important for people to learn about the accomplishments of female computers?
- How can we make sure that the work of women and people from varied backgrounds is recognized more in science and math fields?

The Science and Math of Flight

Early in her career at Langley, Dorothy Vaughan took a course on engineering physics. “Two days a week after work, Dorothy Vaughan and the other new mathematicians filed into a makeshift classroom at the laboratory for an intensive class in the fundamental theory of aerodynamics, which is the study of objects moving through the air” (51). In order to do her job successfully, Dorothy needed to fully understand the science of flight. Be like Dorothy and use the websites below to help you learn more about this fascinating field of science!

Activities

- Learn more about the science of aerodynamics in this short article.
- Discover the materials that NASA uses in creating spacecraft.
- Investigate how rocket propulsion works on this website.
- Read about how a pilot uses math and solve word problems relating to piloting an aircraft.
- Explore how a wing creates lift and drag with this interactive simulation. Scroll down the page to view detailed instructions.
- Investigate the science of flight by engineering your own jetliner with this interactive website.
- Listen to this podcast to find out more about the math behind space exploration.

Reflection Questions

- Where might you observe the effects of aerodynamics in your everyday life?
- In what ways were you surprised about how math is used in the science of flight?

Civil Rights

As the women of *Hidden Figures* broke racial boundaries at Langley, many African Americans around the country were working to create a more equal society through the civil rights movement. "The challenges facing black employees at the laboratory reflected the similar conflicts happening all over the country" (120). Explore the resources below to better understand the important events of the civil rights movement that were occurring at the same time as the lives of the women in the book.

A Special Note: Some of the historical reference materials linked below refer to African Americans as "negro" or "colored" because these were common terms used at that time. Today those terms are considered offensive, and we instead use 'African American' or 'Black,' terms that are considered respectful.

Activities

- Watch a short video about A. Philip Randolph, the early civil rights leader who inspired many of the women in the book.
- Read an article about the Brown v. Board of Education court case and ruling that eventually integrated schools in the United States.
- Learn more about the integration of schools in Farmville, Virginia, the town where Dorothy Vaughan taught and raised her children until she came to Langley.
- View this online museum exhibit about the 1963 March on Washington. Click the links on the left side of the page to learn more about the March and how it changed history.
- Discover more about the iconic story of Ruby Bridges and how she integrated her elementary school.

Reflection Questions

- How did the civil rights movement affect the everyday lives of the women in the book?
- How might the careers of these "hidden figures" have been different if segregation had not existed during that time?

Create

An important part of learning is having the chance to produce something of your own. Here you will find engaging projects that connect with the book and that allow your creative abilities to shine.

Contact Your Representative

NASA is currently planning a rover mission to Mars in 2020. The mission plans to use robots to collect data and work to determine whether Mars is an inhabitable planet for humans. If the 2020 mission is successful, what do you think the next step should be? NASA is a government agency and receives most of its funding from public money, which means the government has to approve funding for any additional missions. Do you think that the government should fund more missions to Mars? If so, what type of missions should these be and what kind of data should be collected? Should they continue to be rover missions or should we send humans to Mars?

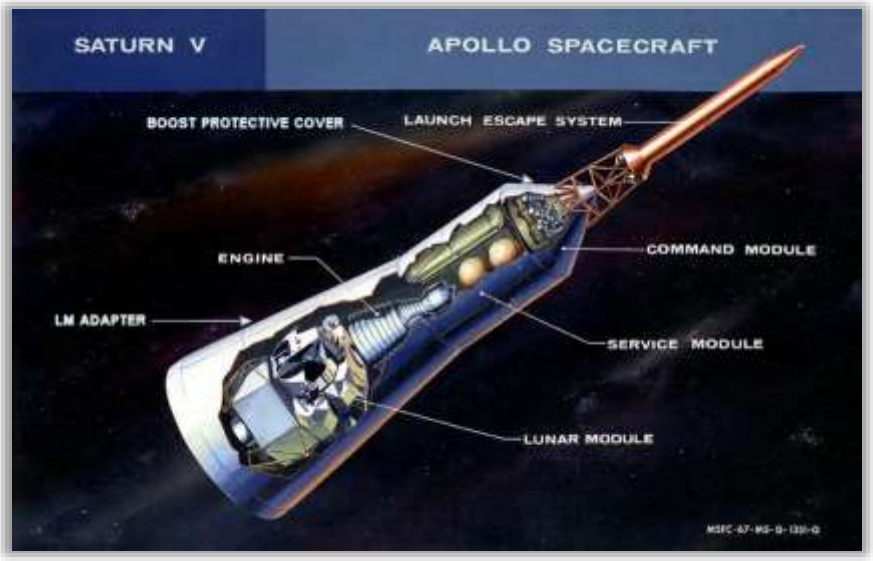
Write a letter to your U.S. senator or state representative persuading him/her to either approve more funding for the space program to reach Mars or to deny funding for the program. Be specific about the benefits and drawbacks of space exploration, as well as about what types of missions, if any, you think should be funded.

Check out this website for a sample template and examples of persuasive letters. In your letter, make sure to include the following:

- A greeting (Dear _____) Use this website to learn how to address your letter and greet the reader.
- An opening paragraph that introduces your purpose in writing the letter.
- 2-3 persuasive paragraphs that give clear reasons and explanations for your purpose.
- A closing paragraph that restates your purpose in a different way and uses persuasive language to convince the reader of your statement.
- A closing (Sincerely, your name).

You can use this persuasive letter checklist to check over your letter when you have completed your first draft. Then, have a parent or classmate help you edit your letter for grammar and spelling mistakes. Type or rewrite your letter neatly and have a parent or guardian help you address and mail the letter to your representative.

Become a NASA Engineer



Imagine you are currently an engineer working for NASA and you have been given the assignment to create a new spacecraft that will take astronauts beyond the moon. Your craft will enable human astronauts to visit other planets in our solar system. Use what you've learned from the book and the online resources from the Explore section above to design your spacecraft.

Create a diagram of the spacecraft and be sure to...

- Label the material used to protect the outside of the spacecraft from extreme heat.
- Include an area for the astronauts to live and sleep.
- Label the propulsion system you will use to launch your spacecraft.
- Keep in mind the properties of aerodynamics, drag, lift and thrust as you design your spacecraft.

Once you have drawn and labeled your spacecraft, have a parent or family member help you find materials around the house that you can use to build a model of the craft. Be creative with the materials you use!

Inform the Public

To celebrate the 50th anniversary of the first moon landing, many air and space museums around the country have put together museum exhibits to celebrate the accomplishments of those who contributed to the moon landing. Imagine that you are creating a display for one of the exhibits about the West Wing computers and their contributions. Pick one of the women from the book and design a biographical infographic about the woman's life and the contributions she made to the United States flight and space program.

You can create the infographic on poster board or use an electronic format like Google drawings. Here's an example of a biographical infographic. If you are using Google drawings, watch this how-to video for helpful instructions. Have a parent help you when you are searching for images.

Follow these steps when designing your infographic:

- Create a title that gives the name of the mathematician (your title should be larger than the rest of your text and draw the attention of your audience).
- Break your information down into 3-4 sections: personal life, education, contributions to the flight and space program, etc.
- Give each section a subheading stating what the section is about (see bullet above).
- Summarize the information about each section into 3-5 concise and clear sentences under the subheading.
- Add images or illustrations to each section that help the reader better understand the information you are communicating.
- Cite any sources you used to create your infographic, including the *Hidden Figures* book, images you found, and other research you compiled.

Share your infographic with family, friends and/or classmates to teach them more about the amazing woman you learned about from this book.

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Reflect & Connect Prompts

In Duke TIP's online Book Club, the "Reflect & Connect" prompts provide an opportunity for students to share their ideas about the book with other Duke TIP students. You may choose to record your responses to these questions in your Reading Journal, or you can use them to talk about the book with friends or classmates who have also read it.

Distant Parent

In 1943, in order to support her family, Dorothy Vaughan applied for a computing job at Langley. "If she accepted the job, she would have to move four hours away from her children and, she'd only be able to come back home to see them on holidays" (7). Despite the distance, Dorothy decided to accept the position.

- What do you think about her decision?
- How would you feel if your parent or guardian made this choice for your family?

Signs that Matter

When the computers from the West Computing wing ate lunch at the Langley cafeteria, they had to sit at a segregated table. "A white cardboard sign on a table in the back of the cafeteria said 'Colored Computers' in crisply stenciled black letters. It was the only sign in the cafeteria: no other group needed assigned seating" (42). One of the west wing computers, Miriam Mann, removed the sign every day for weeks.

- Why do you think Miriam repeatedly removed the sign when she knew it would be replaced the next day?
- How would you feel if you were forced to sit in a certain area of your school cafeteria, based only on the color of your skin?
- After the sign was removed, the women continued sitting at the same table. Why do you think it was so important for them to have the sign go away if they were going to sit there anyway?

Fighting Discrimination Through Hard Work

Although the West Computing wing was segregated, eventually many of the African American computers were asked to work with teams of engineers and mathematicians on particular projects. They were chosen because of the high quality of their previous work. "The women knew that the best way to fight discrimination at work was to do their work as well as they possibly could. The mathematical equations didn't care what color they were, as long as the answers were correct" (85).

- How was working hard a way to fight discrimination?
- What would you have done to fight the discrimination if you were part of the West Computing team?

Lecture Me

Due to the unique and unknown nature of space exploration, "[t]he staff at the Langley Research Center had very few resources to teach engineers about outer space" (140). To tackle this obstacle Katherine Goble's branch began creating lectures that engineers could attend. The lectures covered various topics, including the solar system and issues with reentry into Earth's atmosphere. "The lectures were a crash course in all things aeronautic" (140).

- If you were an engineer working at Langley during that time, what courses would you want to take? What would you want to learn more about?
- Why would you choose these particular courses?
- If you could create a lecture about something you are an expert on for your classmates or friends, what would the topic be? What information would you share and how would you present the information?

Risk of Death

The space program at Langley was not without its failures. In January of 1967, the Apollo 1 spacecraft caught fire and killed the three astronauts inside. "The tragic end of Apollo 1 shook NASA to its core… They honored the dead by learning from the mistakes of the past and carrying on with future missions" (191). NASA chose to move forward with space exploration, despite the loss of lives.

- Do you think that NASA's choice to continue future missions was wise? Why or why not?
- Why do you think astronauts chose to volunteer for future missions despite the risks that the missions could involve?
- If you were an astronaut, would you be willing to risk your life in order to further space exploration? Why or why not?

Cost-Benefit Analysis

Not all Americans supported the price tag that the space program entailed (carried). Just before the Apollo 11 mission was successful, protesters from the Poor People's Campaign marched outside Cape Canaveral to protest space exploration. Some civil rights leaders "argued that the billions of dollars spent to send a handful of people to the moon could help many millions of poor people right here on earth" (195).

- How do you feel about the position of the Poor People's campaign?
- What were the benefits of the space program?
- Do you think those benefits were worth the cost? Why, or why not?

To the Moon and Beyond

At the end of the book Margot Shetterly writes, “Now that NASA had successfully landed astronauts on the moon, Katherine and some of her coworkers talked about a mission to Mars. Others dreamed about going even farther away from earth” (198). Now, 50 years later, our space program still has not reached Mars or any other planet. Many people argue that the cost is not worth the reward and space exploration should be done by private industry instead of using public money through government programs like NASA. What do you think?

- Should funding for NASA be as high a priority in 2019 as it was during the 1950s and 1960s? Why or why not?
- Is it important for humans to land on Mars or other planets? Why or why not?

Keep Reading

A few thoughts on books and reading...

"When I have a little money, I buy books; and if I have any left, I buy food and clothes."—Erasmus

"The more that you read, the more things you will know. The more that you learn, the more places you'll go."—Dr. Seuss

"Outside of a dog, a book is man's best friend. Inside of a dog it's too dark to read."—Groucho Marx

What's next?

We hope that you enjoyed reading *Hidden Figures*, by Margot Lee Shetterly. Check your email for information about our next book club selection. In the meantime, if you are looking for a new best friend—and aren't inside a dog—here are some books you might enjoy. Don't forget to use the tips from "Writing While You Read" (see pages 19 and 20) to deepen your enjoyment and understanding of these books too.

- *The Secret Keepers*, by Trenton Lee Stewart
- Mrs. *Frisby and the Rats of NIMH*, by Robert C. O'Brien
- *Rasco and the Rats of NIMH,* by Jane Leslie Conly
- *All Four Stars,* by Tara Dairman
- *The Stars of Summer,* by Tara Dairman (sequel to *All Four Stars*)
- *The Tell-Tale Start* and other books in "The Misadventures of Edgar & Allan Poe" series by Gordon McAlpine
- *Masterminds*, by Gordon Korman
- *My Near-Death Adventures*, by Alison DeCamp
- *The Scavengers*, by Michael Perry
- *A Single Shard,* by Linda Sue Park
- *The Island of Dr. Libris,* by Chris Grabenstein
- *Escape from Mr. Lemoncello's Library,* by Chris Grabenstein
- *The Lost Kingdom,* by Matthew J. Kirby
- *Flora & Ulysses: The Illuminated Adventures*, by Kate DiCamillo
- *The House of Power*, by Patrick Carman
- *Rivers of Fire*, by Patrick Carman
- *The Dark Planet*, by Patrick Carman
- *The Phantom Tollbooth*, by Norton Juster
- *Navigating Early*, by Clare Vanderpool
- *The Apothecary*, by Maile Meloy
- *The Apprentices*, by Maile Meloy (sequel to *The Apothecary)*
- *The City of Ember*, by Jeanne DuPrau
- *The People of Sparks*, by Jeanne DuPrau
- *The Prophet of Yonwood*, by Jeanne DuPrau
- *The Diamond of Darkhold*, by Jeanne DuPrau
- *The Mysterious Benedict Society*, by Trenton Lee Stewart
- *Chasing Vermeer*, by Blue Balliett
- *The Lightning Thief*, by Rick Riordan
- *Fever 1793*, by Laurie Halse Anderson

Writing While You Read

Have you ever read every word on a page, and turned every page, but when you finished reading, you couldn't remember anything that you had read? If so, you're not alone! Reading can be relaxing, but sometimes we make the mistake of thinking that reading is passive, when it should be active. This doesn't mean you need to run while reading – that might not be a good idea. Writing as you read, however, makes reading active. This process involves some effort, but the payoff for that effort is a deeper understanding and greater enjoyment of the books that you read.

Two strategies for being an active reader are keeping a reading journal and annotating your books.

How do I keep a reading journal?

Below are some suggestions of things that you might write in your reading journal. Experiment with them. You may find that one strategy works really well for you, while others don't work at all. There's really not a right or wrong way to keep a reading journal, as long as you use it as a place to explore your thoughts, reactions, and questions as you read.

What Do I Write?

Write a brief summary, in your own words, at the end of each chapter or section. Include the main ideas or concepts of the chapter, major events in the plot, and any new information that you learn in the chapter.

Do you meet a new character? If so, what is the character like? How do you know? What are the reasons behind what that character says and does? How is the character like other characters in the book? How is the character different? Does this new character remind you of characters you've read about in other books?

Does the setting change? If so, how does the new setting compare and contrast with the previous one? Why does the setting change?

Create your own title for the chapter. If the book includes chapter titles, you might write about why the author has chosen that particular title for the chapter. How does it relate to the main ideas or concepts, major events, and character action in the chapter?

Respond to the chapter. What is the most interesting thing in the chapter? What did you learn that you didn't know before? Do you agree or disagree with the choices the author is making about plot and character? Why or why not? What do you think is going to happen next? How can you connect what is happening in the book to other things you've read? To other things you know? To your own experience?

Identify words that you don't know. Some of these words may just be new to you; others may be jargon, terminology that is used in a particular field or academic discipline. Look these words up in a dictionary, write down their definitions in your notebook, and be sure you understand their meanings and how the author is using them. Often these words are some of the most important in the reading.

Make note of passages where you are confused and/or have questions, and be sure to include a page number. Once you finish the chapter, you can return to the passages. Perhaps further reading clarified the confusion. If not, you know exactly which points in the text to further research or to ask questions about.

Write down striking or unusual use of language. Often writers use particular words, expressions, or sentences in ways that we wouldn't have thought to use them, and the effect can really jump off the page at us. If you come across a passage that seems really cool to you, write it down in your reading journal.

Throughout the online book club activities, you will find activities that are specifically labeled "Reading Journal." When you see that label, read the writing prompt, and respond to it in your reading journal. These prompts will usually ask you to write about a personal connection to what you've been reading. For example, a journal prompt might ask you to write about a time when you found yourself in a situation that is similar to a situation of one of the characters in the book.

To Write or To Type, That is the Question!

Your reading journal doesn't have to be a hard-copy, hand-written one, but there are some advantages to using an old-fashioned journal:

- The physical act of writing promotes a stronger memory for new words, phrases, and strategies you will be learning
- The hard copy notebook can evolve into a collage, a scrapbook, even a work of art that represents your creative, messy, overflowing mind!

How and where you keep a reading journal is much less important than actually doing it! So find an old notebook that may be buried in your desk, ask mom or dad if you can buy an inexpensive composition book, or create a new folder on your home computer and get started!!

How do I annotate a book?

As the word suggests, annotating a book involves making notes or other types of marks that help you focus on particular words or passages that seem important, are often repeated, relate to other things you've read, or simply interest you as a reader. An active reader annotates a text by doing any or all of the following:

UNDERLINING
Specific words that convey significant events or elements of the story's characters, plot or theme

VERTICAL LINE ALONG THE MARGIN
This helps the reader quickly find an important passage underlined, or to highlight a paragraph or other section too long to underline.

ASTERISK/STAR/DOODLE
Placed in the margin, this device is reserved for the most important, special ideas, events or elements of the book. There would be no more than a dozen of these in the entire book; by flipping through, one could easily find once again the most significant passages in the text.

4. NUMBERS
Placing numbers in the margin can help count a set of related points or ideas the author is listing.

p.#32 PAGE NUMBERS
Often indicated by "p. #" or "Cf. #" next to the number, this indicates an idea or element is connected to another on different page of the book, and should be considered together.

CIRCLES
These serve the same function as underlining key words or phrases, but may be reserved for the BIGGEST ideas or facts in the book.

Of course, all of these strategies involve marking in the book. So if you're planning on annotating your book, we recommend that you have your own copy – librarians take a very dim view of writing in books that belong to the media center/library!

Duke TiP

Names, Places, & Faces...Oh, My!

Keeping Track with a Character Grid

When reading a new book, it can be helpful to keep track of the characters you meet and what you think about them. This Character Grid is one way to do just that!

Characters in books (or movies!) are often very like people you meet every day in real life. You may notice the way a character dresses, talks, thinks, behaves, or makes new friends. As you record your ongoing thoughts here, remember that some characters will change and grow depending on what happens to them—or whom they meet—as the story progresses. These are called **dynamic** characters. On the other hand, some characters stay the same no matter what happens to them. These are called **static** characters. Whether a character is willing to change and grow can affect the kind of person he or she turns out to be in the end, and it can also influence how we, as readers, feel about that character.

For example, Marlin, from the movie *Finding Nemo*, starts out as an overprotective dad who doesn't believe his son Nemo should try new things because he might get hurt. As the movie progresses, though, Marlin makes new friends, like Crush and Dory, who help him learn to guide and encourage his son without keeping him from experiencing the fun life has to offer. By the end of the movie, Marlin has changed his way of thinking about how to be a "good" dad. This not only makes him a dynamic character but also makes us like him better and want him to succeed as a parent. (If Marlin had not changed his ways, we might have ended up being frustrated by him.)

INSTRUCTIONS:

1. Tuck this Character Grid into your book or Reading Journal. Then, each time you meet a new character in the book, take a moment to write down his or her name on the grid and answer the "As You Are Reading" questions. (If you run out of writing room, feel free to create your own grid or answer these questions in your Reading Journal!)
2. Once you have finished the book, go back through your grid and answer the "After You Have Finished the Book" questions. As a way of wrapping up, consider: With which character(s) did you connect most strongly? What does this tell you about yourself?

Character's Name	As You Are Reading...			After You Have Finished the Book...	
	Where/When do you meet this character?	Describe this character's appearance and behavior.	What stands out to you about this character's name, behavior, or choices?	Why is this character important to the story overall?	Is this character **static** or **dynamic**? What evidence from the book tells you so?

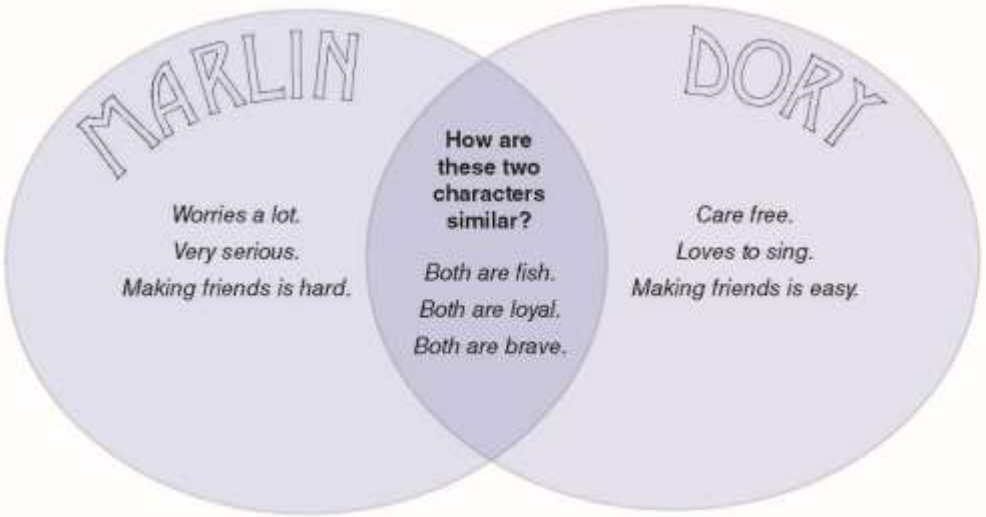
Duke TiP

Finding Common Ground

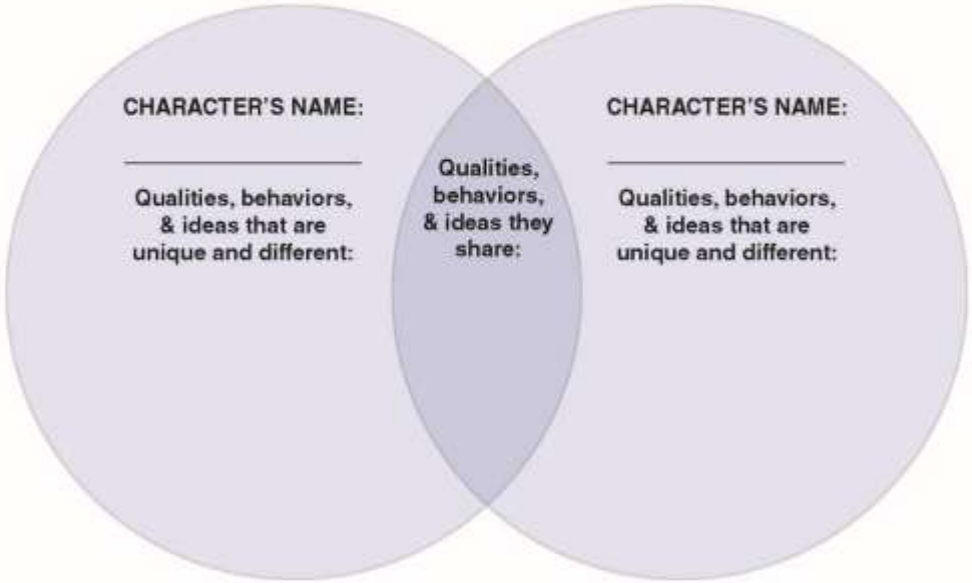
Side-By-Side Comparison with a Venn Diagram

Creating a Venn Diagram can help you visualize and make sense of the similarities and differences between two or more things. For example, as you are reading a book, you could use a Venn Diagram to compare key characters, places, or events.

A basic Venn Diagram is made up of two, partially overlapping circles. Let's say you wanted to compare two characters. In the outer part of each circle, you would write one character's name and list the qualities, behaviors, and ideas that make him or her unique and different. In the space where the circles overlap, write down characteristics the characters share. If we were comparing Marlin and Dory, from the movie *Finding Nemo*, here is how our Venn Diagram might look. (If you've seen this movie, try adding some observations of your own!):



Now you are ready to draw your own Venn Diagram in your Reading Journal! To get started, try something like this:



If you want to compare more than two characters, places, or events, simply add additional circles to your Venn Diagram. Be creative! Just pay attention to the places where your circles overlap and look for similarities there. Here are some other possibilities: