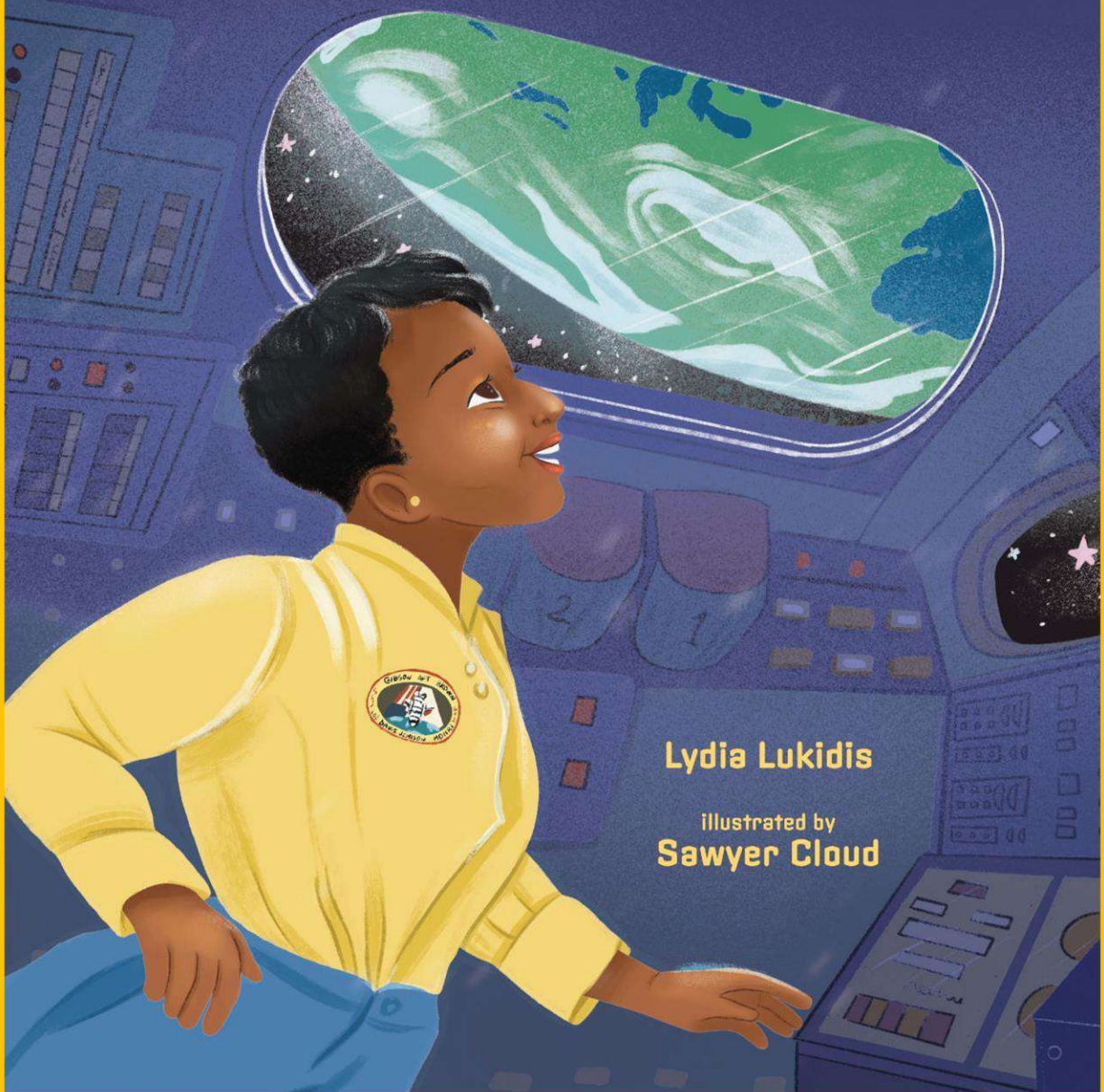


Teacher guide

Dancing through Space

Dr. Mae Jemison Soars to New Heights



Lydia Lukidis

illustrated by
Sawyer Cloud

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LYDIA LUKIDIS



How to Use This Guide

This teacher guide to *DACING THROUGH SPACE: Dr. Mae Jemison Soars to New Heights* is designed for educators, librarians, and parents to help children learn beyond the book itself.

The guide provides dozens of curriculum standards in Common Core ELA and Math, and Next Generation Science Standards that align with the narrative. It also proposes various curriculum-based activities for students K-5.

The text is written as a dual narrative, meant to show two passions, science and dance, that Mae continued to follow. The text introduces both passions until they ultimately converge.

In addition to the educational components, this guide cultivates numerous valuable skills such as:

- Critical thinking
- Creative problem solving
- Memory and research skills
- Literacy: ELA texts and poetry
- Collaboration
- Analytical and cognitive skills
- Imagination

Before you read

Before each student reads the book (or gets it read to them), have a discussion with them about what they know about the deep space and astronauts.

You can also ask them what their interests and dreams are. What do they love? What fascinates them? Dr. Mae Jemison is a pioneer in her field and opened the door for many others. She never gave up. How would students like to change the world for the better? How can their actions impact others?



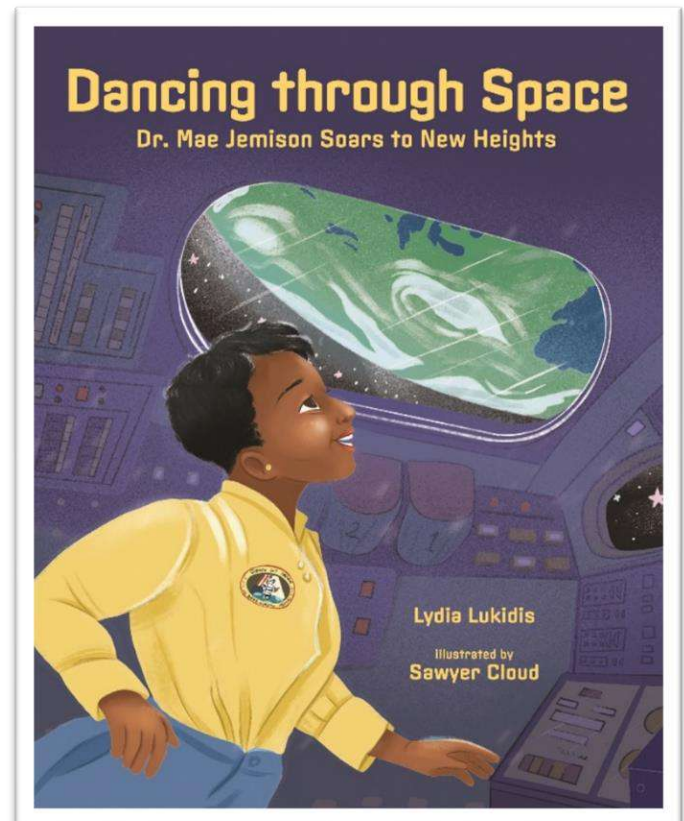
About the Book

Author: Lydia Lukidis
Illustrator: Sawyer Cloud
Publisher: Albert Whitman & Co.
Copyright: 2024
ISBN-10: 0807514586
ISBN-13: 978-0807514580
Page count: 32 pages

Reading age: 5 - 10 years
Reading Level and Interest Level: grades K-4
Text type: dual narrative nonfiction

Thematic connections:

- Following you dreams
- Perseverance
- Astronomy
- Deep space / space exploration
- Medicine / biology
- Dance /choreography



Synopsis

The true story of Dr. Mae Jemison, whose lifelong passions of science and dance prepared her to become a trailblazing astronaut.

Today, Dr. Mae Jemison is famous for being the first Black woman to travel into outer space. But when she was growing up, she felt torn between two passions: science and dance. It seemed like an impossible choice. There had to be some way to make room for both—and Mae found one. As an adult, she combined her gifts of scientific logic and artistic creativity and became an astronaut.

Reviews

“This picture-book biography of astronaut Mae Jemison focuses on her shared passions for science and dance. The chronological narrative toggles smoothly between scientific achievements (usually shown on the left side of the spread) and her artistic activities (detailed on the right), until the two mesh when her well-honed muscle coordination aids her mastery of complicated spatial maneuvers. Appended with an author's note and timeline, this makes a good addition to STEAM literature.”

-Booklist Reviews

“Early passions for science and for dance rocketed Mae Jemison into Earth’s orbit. When introducing a young Mae, whose curiosity about the natural world was equaled only by her inability to sit still, Lukidis frames her brief portrait of the future astronaut around those twin qualities. So it was that science “gave her courage” and dance “gave her determination” to complete her medical studies, keep her body flexible and strong, and weather setbacks on the way to becoming the first Black woman to fly into space. A quick but lyrical character study.”

-Kirkus Reviews

“This is such a lovely picture book biography of Mae Jemison, the first Black woman in space. Lukidis uses parallel passages to display Jemison's twin passions: science and dance. She brought to both of these areas her curiosity, passion, and determination. And in return, they gave her gifts too: courage as well as a strong mind and body.

This book celebrates lifelong learning and having multiple talents and loves. It also rejects the idea, through Jemison's choices and success, that you have to choose ONE thing and do ONLY that one thing. We are not just one thing. And even though Jemison's role as an astronaut is the ultimate part of the book and what secured her place in history, the language of dance oozes into that part of her story too.”

-Award winning author Laura Salas

“This incredible book should be in every classroom and household. The author does a fabulous job of engaging the reader sharing Mae's life and the steps that brought her to being an astronaut. The narrative is inspirational and empowers every child and adult.”

-Author Zainab Khan

“Today's kids are so pressured to pick one thing and specialize in it. What a great message to hear that not only do you not have to choose, your life can be more rich and well balanced if you don't choose! Besides the science/dance aspect, the writing was great both in the word choice and the structure. This would be a great book to use for a compare/contrast unit, but is also just an entertaining way to read. The excitement builds as Dr Jemison has her dreams of going to

Reviews

space dashed, and then fulfilled! What a great choice to have a beautiful double spread illustration of Dr Jemison dancing without gravity in space. Perfect! Highly recommended.”

-Author Nell Cross Beckerman

“My son wrote about Mae Jemison when he was in 3rd grade. I wish he'd had this book to read then, because it's unusual to see stories about famous people who have more than one occupational love and pursue both but in different ways. The parallel structure allows readers to see how these loves play out as she grows up and pursues a career as an astronaut, without giving up dance. A great book to help kids understand that it's perfectly fine to have more than one career goal to pursue throughout their lives.”

-Author Jilanne Hoffman

“Too often parents, teachers, and culture require children to choose between creative endeavors like writing, art, or dance and scientific exploration with analytical reasoning and disciplined methodology. In this perfect book -- *Dancing through Space: Dr. Mae Jemison Soars to New Heights* (Illustrated by Sawyer Cloud), author Lydia Lukidis shows how the melding of both sides of Dr. Jemison’s self – creative and analytical- enabled her to become a success in the world of science as an astronaut and to always keep dancing.”

-Author Stephanie Wildman

“Lydia Lukidis, with illustrator Sawyer Cloud, explores Dr. Mae Jemison's life in *DANCING THROUGH SPACE*, seamlessly weaving her dual passions—science and dance. Vibrant illustrations depict how these childhood interests shaped her amazing journey, delivering a powerful message of embracing true passions, persistence, and determination. The side by side spreads of her two life's passions make the reading journey so interesting. This is a wonderful book for kids, teachers, librarians, bookshelves.”

-Author Tina Shepardson

“Lydia Lukidis' *STEAM* nonfiction picture book about Dr. Mae Jemison takes readers on a delightful and inspiring journey through time and space. The story, beginning in Jemison's childhood, cleverly follows the protagonist's dual, burgeoning passions (science and dance). By keeping them on different sides of each spread, Lukidis is able to build a sense of tension and competition--which should Jemison pick? How could she choose? Through twists, turns, and then a big reveal, readers learn how Jemison's two talents ultimately and meaningfully (interstellar-ly?!) intertwined. Aside from celebrating Jemison's achievements, this story will show readers that there is an interconnectedness in nature, science, and creative expression.”

-Author Karen Greenwald

About the Author

Lydia Lukidis is the author of 50+ trade and educational books for children. Her titles include *DANCING THROUGH SPACE: Dr. Mae Jemison Soars to New Heights* (Albert Whitman, 2024), *DEEP, DEEP, DOWN: The Secret Underwater Poetry of the Mariana Trench* (Capstone, 2023) which was shortlisted for a Silver Birch Express (Forest of Reading) award and nominated for a Cybils award, *THE BROKEN BEES' NEST* (Kane Press, 2019) which was nominated for a Cybils Award, and *NO BEARS ALLOWED* (Clear Fork Media, 2019). A science enthusiast from a young age, she now incorporates her studies in science and her everlasting curiosity into her books.

Lydia is very involved in the kidlit community. She volunteers as a judge on Rate your Story and co-hosts the annual Fall Writing Frenzy competition. Another passion of hers is fostering a love for children's literacy through the writing workshops she regularly offers in elementary schools across Quebec with the Culture in the Schools program.

For more information, please visit www.lydialukidis.com



About the Illustrator

Sawyer Cloud is a freelance illustrator from Madagascar. A member of SCBWI, she is the illustrator of the picture books *Jade Braves the Dark* and *Dear Mama's Loving Arms*.

So far, she has worked on more than 30 books published around the world and have collaborated with most of the major traditional publishers in children's literature including Penguin Random House, MacMillan, Sourcebooks, Quarto, Harper Collins, MacMillan and others.

For more information, please visit <https://www.sawyer.cloud/>

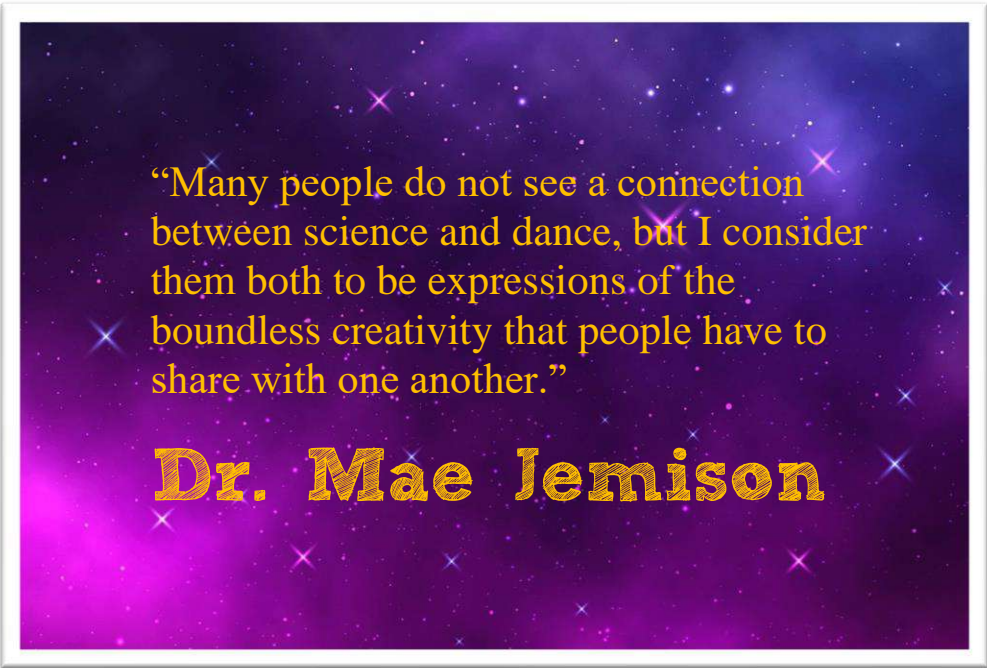
Author Note

When I researched Dr. Mae Jemison’s life, I was fascinated by her determination and perseverance. She always followed her dreams, no matter what obstacles lay in her way. It never occurred to her that she “couldn’t” or “shouldn’t” do certain things, like going to space.

The more I learned about Mae, the more I understood how important creativity is for her. Scientists tend to see life through the lens of reason and logic. While Mae uses science to explain the world, she also recognizes the value of art. Through her many different passions, she realized early on that science and art are not separate. They work together to give us a fuller understanding of who we are.

This concept mirrors my own life. Early on, I studied science and earned a degree in pure and applied science. When I went to university, I decided to leave that world behind to pursue art and literature. At the time, I saw science and art as separate fields. Today, my path has come full circle, and I understand that both worlds are, in fact, connected. I now use all the knowledge I gained when I studied science and pour it into my work as a writer. I love writing STEAM books that capture the magic around us, as well as the science in our everyday lives. My journey has taught me that we can be scientists and artists at the same time. That’s why I felt so drawn to Mae’s story and why I had to write this book.

-Lydia Lukidis



“Many people do not see a connection between science and dance, but I consider them both to be expressions of the boundless creativity that people have to share with one another.”

Dr. Mae Jemison

Curriculum Standards

ELA CCSS

Kindergarten:

RI.K.1; RI.K.2; RI.K.3; W.K.2; W.K.3; SL.K.5; L.K.6

1st Grade

RI.1.1; RI.1.2; RI.1.3; W.1.8; SL.1.2; SL.1.1; SL.1.5

2nd Grade

RI.2.1; RI.2.2; RI.2.3; RI.2.4; RI.2.5; RI.2.6; W.2.8; SL.2.1; SL.2.2; SL.2.5

3rd Grade

RI.3.1; RI.3.2; RI.3.3; RI.3.8; W.3.7; W.3.8; SL.3.1; SL.3.2

4th Grade

RI.4.1; RI.4.2.; RI.4.3; RI.4.5; RI.4.7; RI.4.8; W.4.7-9; SL.4.1

5th grade

RI.5.1; RI.5.2; RI.5.3; RI.5.4; RI.5.5; RI.5.8; W.5.7-9; SL.5.1; SL.5.2

Curriculum-Based Activities

ELA Activities with Social Studies Connections

PreKindergarten

Identify Dr. Mae Jemison as a scientist, doctor, dancer, and astronaut. Dress up for the hobbies or careers you might want to pursue. Research and read about different community helpers like doctors. Draw yourself now or in the future. Do science experiments and have a dance party!

Kindergarten-5th Grade

RI.K.3, RI.1.3, RI.2.3; RI.3.3; RI.4.3; RI.5.3

With prompting and support, describe the connection between two individuals, events, ideas, or pieces of information in a text.

Activity: Compare and Contrast

Make a class Venn Diagram chart to show what Dr. Mae Jemison learned from science, dance, and from both at once. Draw and label Dr. Mae Jemison pursuing her dreams. Draw yourself too! Retell the story of Dr. Mae Jemison's life. Cite the text to show what her hard work led her to achieve in the fields of science, medicine, and dance. Create a timeline of events.



Curriculum-Based Activities

ELA Activities with Social Studies connections

Prekindergarten

Identify Dr. Mae Jemison as a scientist, doctor, dancer, and astronaut.
Dress up for the hobbies or careers you might want to pursue. Research and read about different community helpers like doctors. Draw yourself now or in the future.
Do science experiments and have a dance party!

Kindergarten-5th Grade

RI.K.3, RI.1.3, RI.2.3; RI.3.3; RI.4.3; RI.5.3

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Retell the story of Dr. Mae Jemison's life. Cite the text to show what her hard work led her to achieve in the fields of science, medicine, and dance. Create a timeline of events.



ELA Activity

Comprehension Questions

Ask the students to use the main text to answer the following questions:

1. What were Mae's two passions?

2. What did Mae do as a young girl that showed her love for science?

3. What did Mae do as a young girl that showed her love for dance?

4. What did her parents encourage her to do when she was young and had questions?

5. How did Mae see choreography in nature?

6. Why do you think the kindergarten teacher was surprised when Mae said she wanted to be a doctor?

7. What classes did Mae take when she was young?

ELA Activity

8. What kind of dance did Mae study throughout their life?

9. What skill did science help her cultivate?

10. What skill did dance help her cultivate?

11. What did Mae study at Stanford University?

12. How did the professors treat Mae in university?

13. What was her mother's advice when Mae was trying to decide what to study?

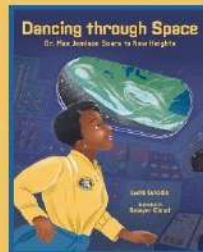
14. Why did NASA put their astronaut training on hold when Mae applied?

15. What were some things Mae had to do in her astronaut training?

16. What milestone / special achievement did Mae succeed at when she went to space?



DREAM BIG!



**Albert
Whitman
& Co.**

Written by Lydia Lukidis
Illustrated by Sawyer Cloud
Published by Albert Whitman

Timeline of Dr. Mae Jemison's Life

Dr. Mae Jemison accomplished many things. Her scientific curiosity opened the door to engineering, medicine, and astronomy. Her love of the arts also led her to study dance and choreography. But most of all, she's an agent of change.

1956: Mae Carol Jemison is born in Decatur, Alabama.

1959: Mae's family moves to Chicago, Illinois.

1973: Mae graduates from Morgan Park High School with honors.

1977: Mae receives degrees in chemical engineering and African and Afro-American studies from Stanford University.

1981: Mae graduates from Cornell University Medical College with a degree in medicine.

1983: Mae joins the Peace Corps and travels to West Africa, where she serves as a medical officer for two years.

1985: Inspired by astronaut Sally Ride and *Star Trek* actress Nichelle Nichols, Mae applies for admission to NASA's astronaut training program.

1986: The Space Shuttle Challenger explodes, and NASA puts the training program on hold.

1987: Mae reapplies and is accepted to NASA.

1992: Mae blasts into space aboard the Space Shuttle *Endeavour*. The mission lasts 7 days, 22 hours, 30 minutes, and 23 seconds. Mae and the crew conduct a variety of science experiments.

1993: Mae leaves NASA to pursue other dreams.

1993: Mae becomes a teacher at Dartmouth College and forms The Jemison Group, a technology design and consulting company.

2024: Retired, Mae lives in Houston, Texas. She continues to speak at conferences and travels to schools to talk about perseverance, the importance of pursuing one's dreams, and becoming an agent of change. She built a dance studio in her home and still enjoys dancing.

Timeline of Other Pioneering Women in Space

Did you know that 61 women from around the world have flown in space? And many more have been involved in the space industry. Check out these awesome milestones:

1959 -13 American women passed the tests for the Mercury astronaut training program but none were allowed to fly in space.

1962- In a similar case, 12 women passed NASA's admission test. But again, not a single one of them were chose for the program.

1962- In Russia, 5 women were also chosen to become astronauts, but none made it to space.

1963- Touch-down! Valentina Tereshkova became the first woman to go to space. She was Russian. She was also the youngest woman ever in space. She was 26 years old.

1982- Svetlana Savitskaya was the second woman to go to space. She was also from Russia. She went back in 1984 and was the first woman to ever “walk” in space.

1983- Astrophysicist Sally Ride was the first American woman to go to space. She had a pretty cool job: she had to control a gigantic robotic arm and release satellites into space.

1984- Kathryn Sullivan was the first American woman to walk in space.

1992- Dr. Mae Jemison was the first African American woman in space when she journeyed aboard the Endeavour shuttle.

1993- Ellen Ochoa was the first Hispanic American woman in space.

1995- Women began to get even more respect. Eileen Collins became the first woman to pilot an American space shuttle.

1998- More progress! More than half the flight control team for STS-95 were women.

1999- Eileen Collins became the first female Shuttle Commander when she was aboard the STS-93. She would later command another shuttle in 2005.

2004- Judy Resnik, Christa McAuliffe, Kalpana Chawla, and Laurel Clark all win the Congressional Space Medal of Honor.

2002- Biochemist Peggy Whitson became the first resident scientist of the International Space Station.

Word Search

O J K T V U A S T R O N A U T H B D R Q
S C A D P W F E Y E F H T G G C M R A V
L H B X V S W Y C D U N I V E R S I T Y
R O Q Y O M D R A U H U O P P D Q N S U
R R Y V X I K N T C N F N D E C V V C P
Y E B J Y S G X L A N F O K R E M V I Z
F O P O V C O A A T B V W R S P P T E Z
P G E K E P S C V I C U M G E D W Q N C
Z R C A O N Y T R O V Q F L V A Z C C X
B A K U U E G U R N W H I E E N J O E J
A P I J R D U I J E M R L A R C S U Q E
P H A M R I A O N N N Q S R A E Y R E M
A Y H U N P O N B E J G R N N E G A Y I
S S P D F Z C S W C E K T M C V F G G S
S X B V U O D Q I M Y R V H E O Y E B O
I I Y E I F O F N T L I I K K L U Q Y N
O A G K Q X B V V U Y I B N Q H Q E K I
N Y U Q X S H U T T L E G Y G T W M B V
W I K T I Q B B W D M W R D F I C R M X
E V L V B L R H Y I Z G S L O S P A C E

perseverance

curiosity

strength

passion

dance

learn

choreography

university

shuttle

astronaut

science

engineering

education

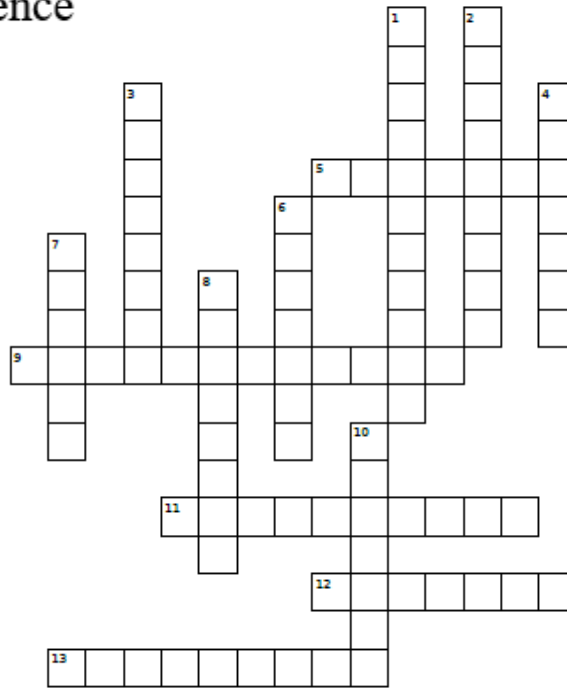
Jemison

space

courage

Crossword Puzzle

The different branches of science



Down:

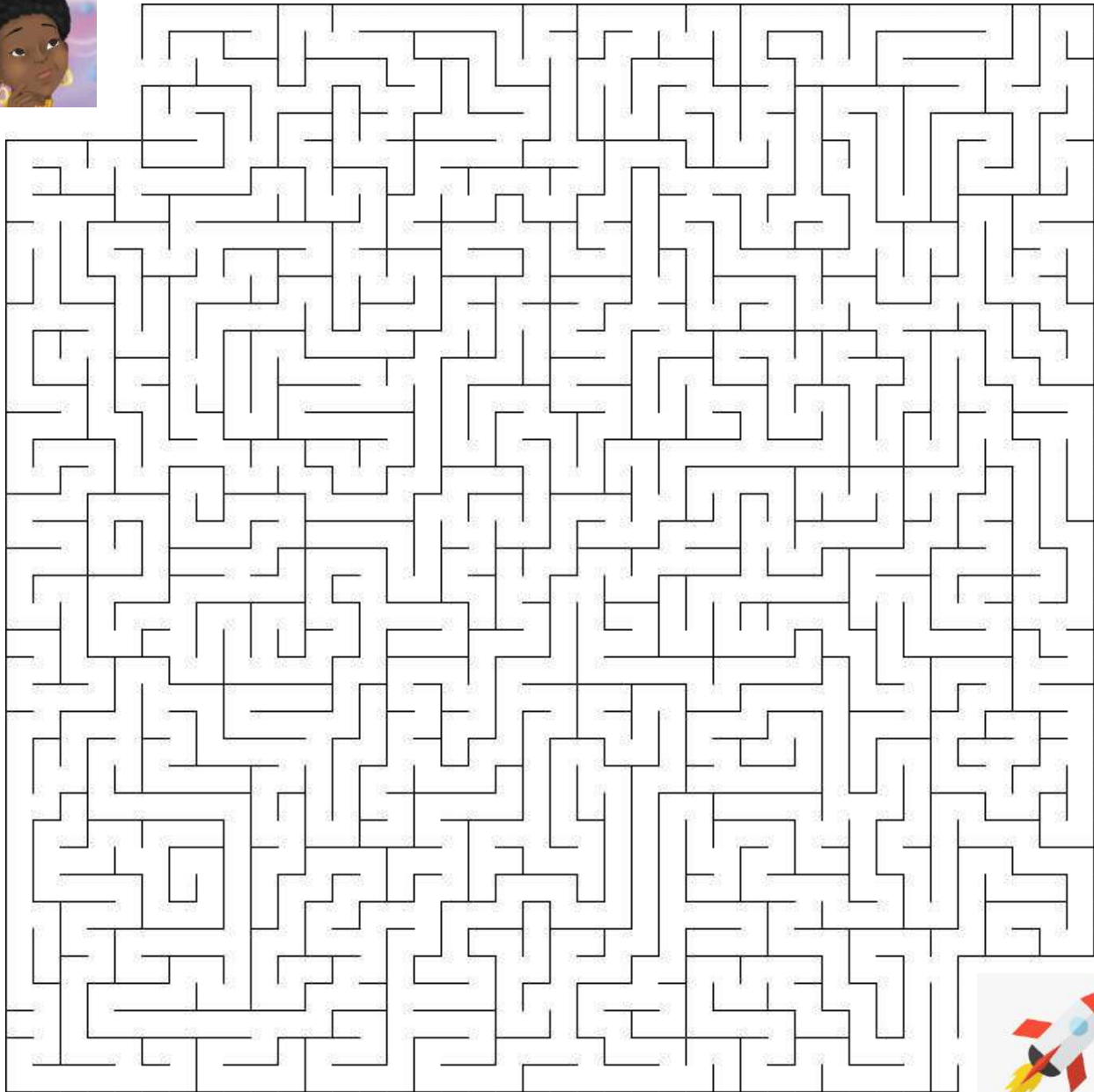
1. The study about climate, rainfall, wind, speed, density, etc
2. - The study of objects in and beyond the atmosphere of the earth
3. The study, diagnosis, research, etc. of various diseases and treatments
4. The study of matter, motion, energy, force, objects, etc. related to universe and its function
6. The study of environment, relation of living organisms in the environment and ecosystem
7. A known branch of science, studying about plant kingdom
8. The study about genes, genetic facts, diseases of genes, etc

Across:

5. The study about human beings, nutrition, diseases, medicine, etc
9. The study of the history of life on Earth as based on fossils
11. The study of all topics related to the Ocean
12. The study of the animal kingdom
13. The study and analysis of various elements, composition, structure, chemical process, etc

Maze

Help Mae get to her rocket!



Coloring Sheets

Dancing through Space

Dr. Mae Jemison Soars to New Heights



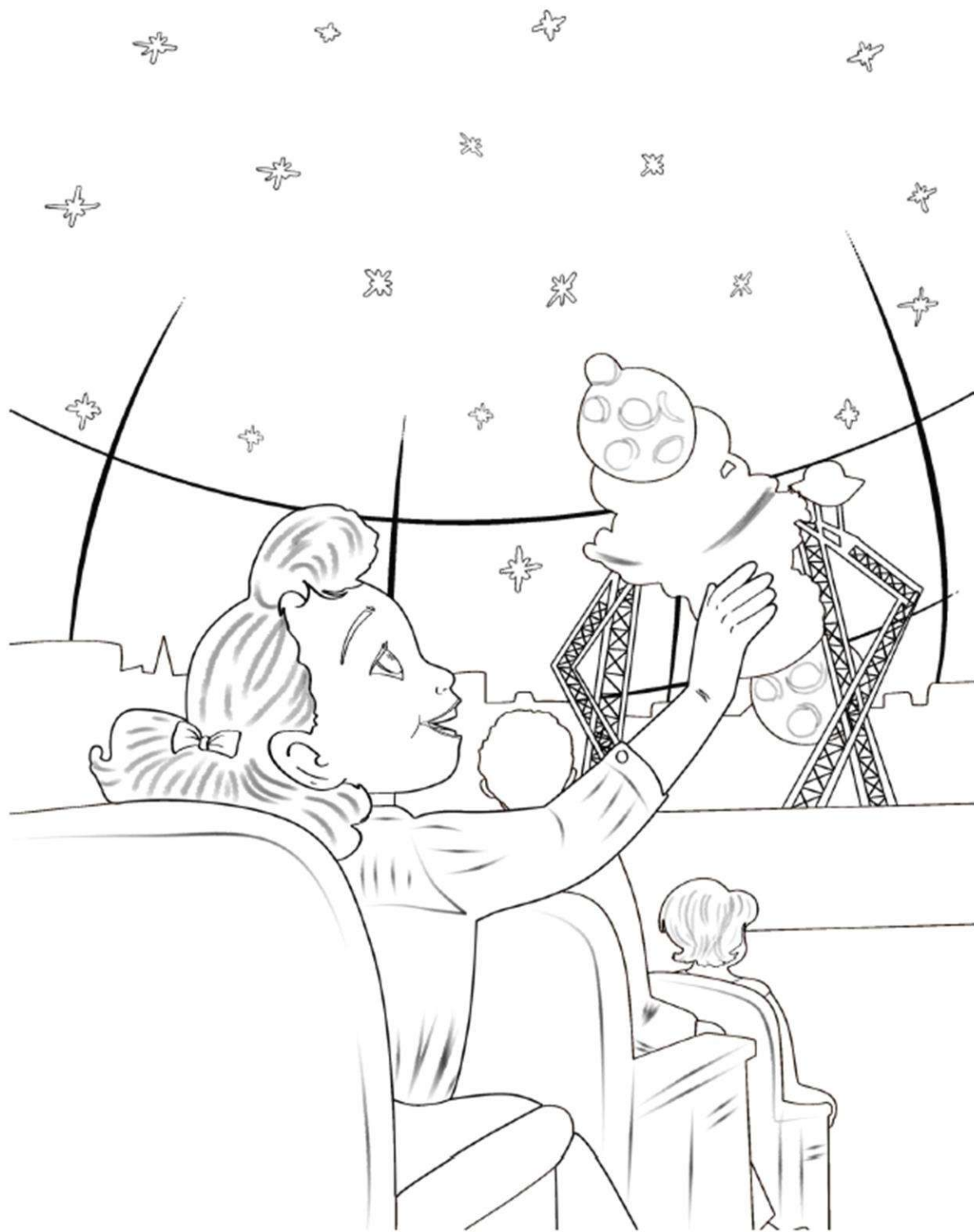
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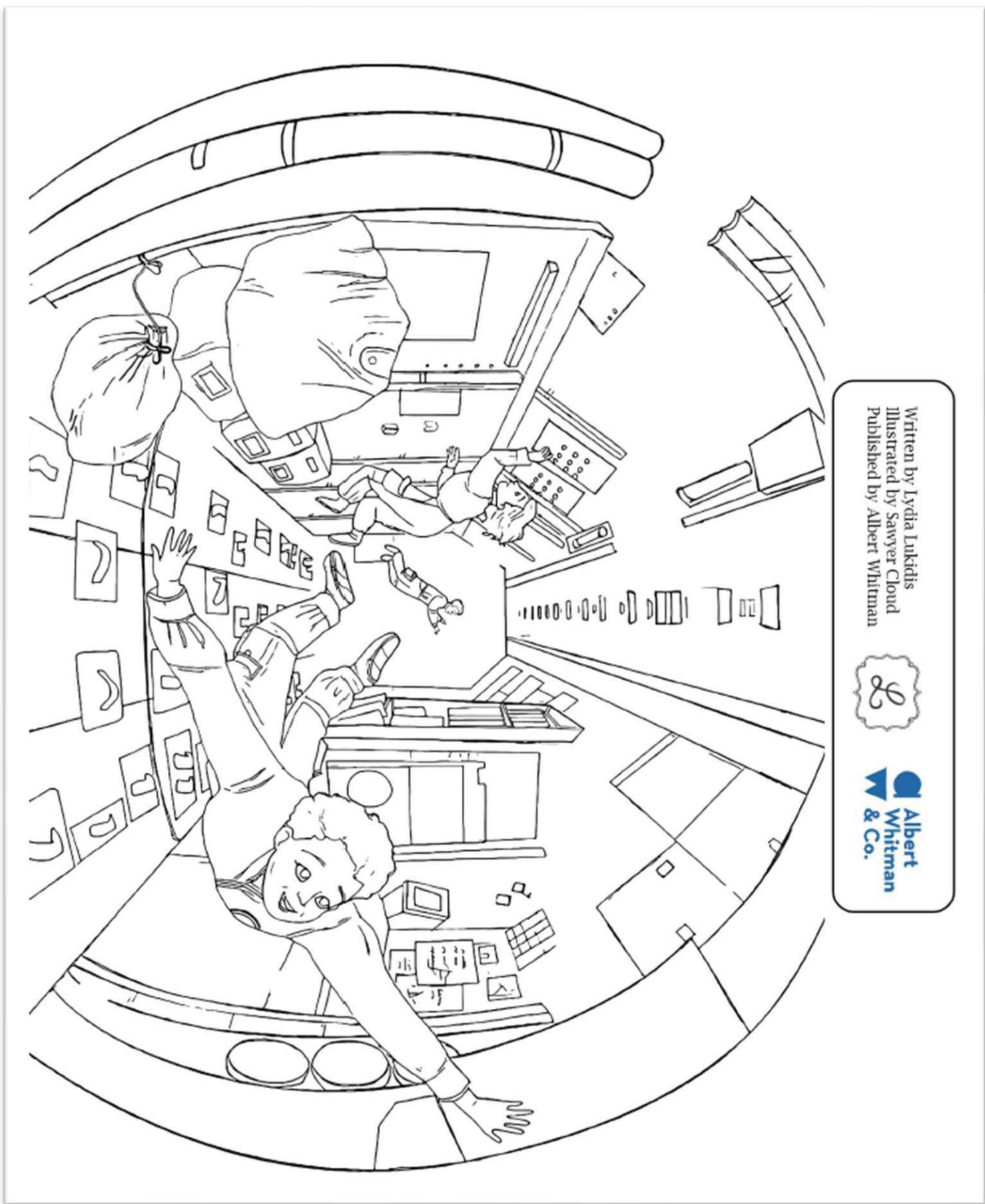


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 Albert
Whitman
& Co.





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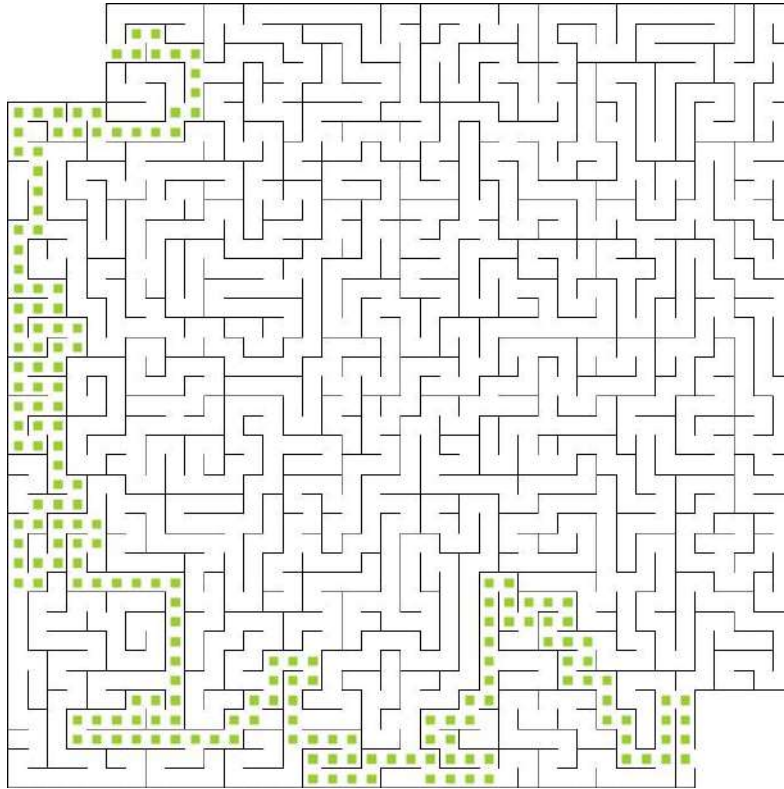
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Whitman
& Co.

Answer Key

Comprehension Questions

1. What were Mae's two passions? **Dance and science.**
2. What did Mae do as a young girl that showed her love for science? **She questioned, explored, and learned new things.**
3. What did Mae do as a young girl that showed her love for dance? **She jumped, flipped, and rolled.**
4. What did her parents encourage her to do when she was young and had questions? **To find the answers herself like a true scientist.**
5. How did Mae see choreography in nature? **Everywhere from birds soaring to waves swirling.**
6. Why do you think the kindergarten teacher was surprised when Mae said she wanted to be a doctor? **She didn't expect Mae to say doctor because in that time, doctors were male and nurses were female.**
7. What classes did Mae take when she was young? **Dance classes.**
8. What kind of dance did Mae study throughout their life? **Ballet, modern dance, African, Jazz, and Japanese.**
9. What skill did science help her cultivate? **Her mind became strong and sharp.**
10. What skill did dance help her cultivate? **Her body became strong and muscular.**
11. What did Mae study at Stanford University? **Chemical engineering.**
12. How did the professors treat Mae in university? **They pretended she wasn't there and belittled her.**
13. What was her mother's advice when Mae was trying to decide what to study? **"You can always dance if you're a doctor but you can't doctor if you're a dancer."**
14. Why did NASA put their astronaut training on hold when Mae applied? **The Space Shuttle Challenger exploded.**
15. What were some things Mae had to do in her astronaut training? **She floated in an antigravity tank and memorize hundreds of instructions for space station systems. She also handled heavy equipment and practiced countless flight simulations.**
16. What milestone / special achievement did Mae succeed at when she went to space? **She was the first African American woman to go to space.**

Maze



Don't let anyone rob you of your imagination, your creativity, or your curiosity. It's your place in the world; it's your life. Go on and do all you can with it, and make it the life you want to live.

— Mae Jemison —

AZ QUOTES

For more information about the author:

<http://www.lydialukidis.com/>

For more information about the illustrator:

<https://www.sawyer.cloud/>

For more information about Capstone:

<https://www.albertwhitman.com/>



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