

MARS  
SCIENCE LAB  
**ENGINEER**

DIANA TRUJILLO

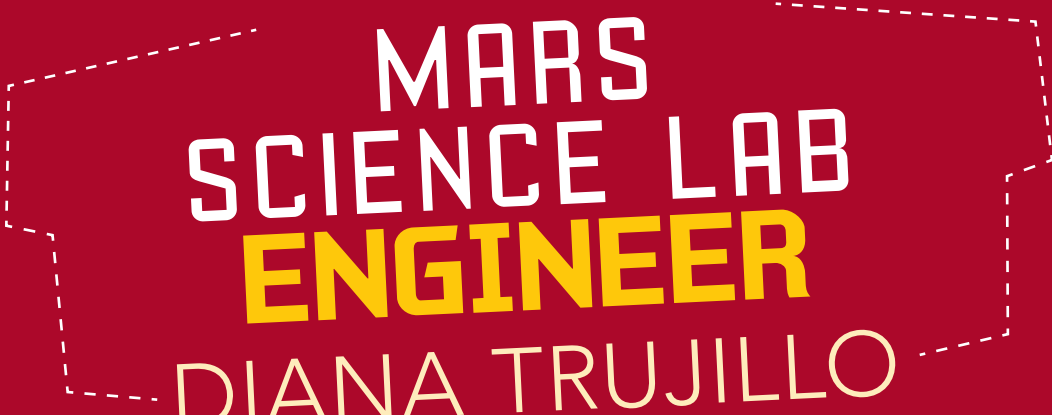
KARI CORNELL

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STEM *trailblazer* BIOS




MARS  
SCIENCE LAB  
**ENGINEER**  
DIANA TRUJILLO

KARI CORNELL

Lerner Publications  
Minneapolis





*For Will and Theo, the sky's the limit*

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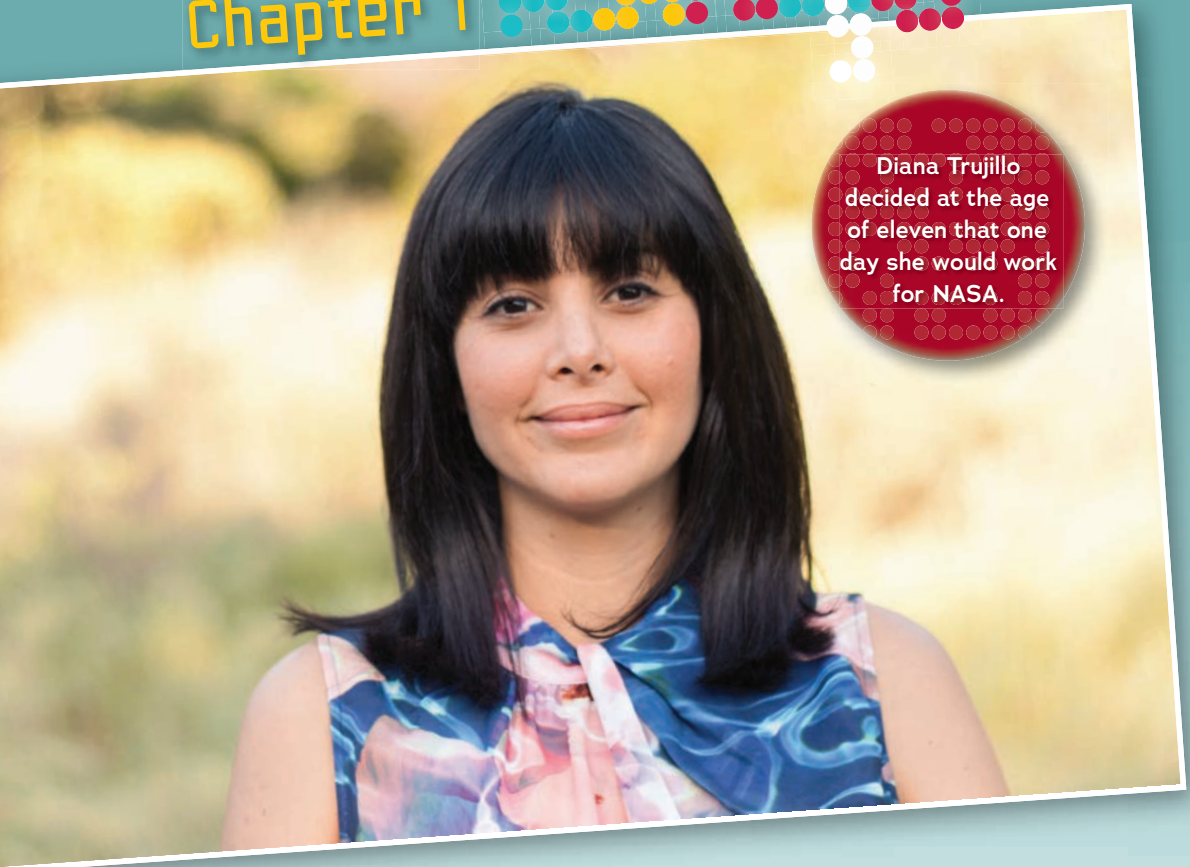


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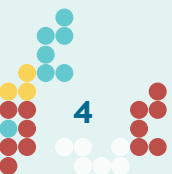
## Chapter 1

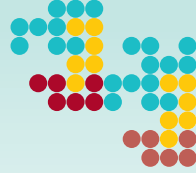


Diana Trujillo decided at the age of eleven that one day she would work for NASA.

# TOUCH THE STARS

**A**s a child, Diana Trujillo gazed at the stars and the sky. More than anything, she wished she could reach out and touch them. She wanted to know more about what was in outer space.





When Diana was eleven, she learned about the National Aeronautics and Space Administration (NASA) at school. She learned that NASA built rockets and sent astronauts into space. Her school gave her a NASA sticker. Diana loved the sticker's design. And she knew that one day she wanted to wear the logo that appeared on the sticker. She wanted to work at NASA.



When Diana was a girl, the Mir Space Station (*below*) was the shining star of space exploration. Its name can be read in English as “world,” “peace,” or “village.”




## THE EARLY YEARS

Diana grew up in Cali, Colombia, in the 1980s and 1990s. As a young girl, Diana liked figuring out how things worked. She spent hours at the library reading books. She also played outside and explored nature. She learned to swim, dance, and roller-skate. When she swam and danced, Diana paid attention to how her body moved through water and air. When she roller-skated, she wondered what made the wheels of her skates roll along the sidewalk.



Diana's  
hometown of  
Cali, Colombia






Diana loved to draw and design too. She loved that even a single line could look different depending on how she drew it. She found art in books and then combined images to make a new design. Diana also spent many hours building things with LEGO bricks alongside her younger brother. They would build their own rocket ships and launching pads, cars, cities, and creatures. Diana thought carefully about how the LEGO bricks could fit together to form different structures.



## NASA IN THE 1990s

The 1990s was a very exciting time at NASA. In just ten years, NASA launched more than sixty space shuttle missions—more than twice the number of space shuttles that they had launched in the 1980s. In 1990, the space shuttle *Discovery* carried the Hubble Space Telescope into space. With this telescope, scientists are able to view space in a way they never could from Earth. The next year, NASA began building a space station. In 1997, NASA sent a land explorer called *Sojourner* to Mars. A camera on *Sojourner* took more than 550 photos of the Martian landscape.





## MAKING CONNECTIONS


After school, Diana would visit her grandfather, who owned a corner store in a small Colombian village. The store didn't have a cash register, so every time a customer bought something, Diana's grandfather had to do his own math. When Diana visited, her grandfather turned the math into a game. He and Diana raced to see who could add up the prices faster.

Diana's other grandfather owned a company that made parts for cars and machines. When Diana visited, she saw people using math to create new machine parts. But Diana also noticed something else. The **engineers** weren't just using



### CHALLENGED BY PHYSICS

In school, Diana's favorite subjects were math, art, and **chemistry**. But she struggled with physics. Physics includes the study of how things move when pushed or pulled in different directions. Diana's mother hired a tutor to help her with physics after school. Though it wasn't easy, Diana worked hard. As an adult, Diana completely overcame her struggles with physics. At NASA, she uses physics every day!



## TECH TALK


“I spent so much time as a child trying to connect the dots. My job now allows me to do just that.”

—*Diana Trujillo*

math. They were using art too! They used rulers to draw and design parts. Diana realized she could use her love of math and her love of drawing at the same time.

Diana's hard work  
in math and science  
would pay off later  
when she worked on the  
design of the Mars  
*Curiosity* rover.





Trujillo also mentors new scientists at NASA. She talks to students in schools too. Trujillo believes that just as she found a connection between art and math, everyone can find a connection between their passions and a career in science or math.



## TECH TALK

**“My advice for students is to pick a topic you like, study a topic you like, and then you will see a connection. Because everything uses math!”**

*—Diana Trujillo*



# TIMELINE

1983

Diana Trujillo is born in Cali, Colombia.

2000

At the age of seventeen, Trujillo graduates from high school and moves to the United States to attend Miami Dade College. She studies English there for two years.

2002

Trujillo enrolls at the University of Florida, where she studies aerospace and mechanical engineering.

2006

Trujillo attends the NASA Academy at Goddard Space Flight Center in Maryland. She transfers to the University of Maryland to do research with Brian Roberts.

2008

Trujillo is hired to work on NASA's Constellation Program.

2009

Trujillo begins working on the *Curiosity* rover project at NASA's Jet Propulsion Lab in Pasadena, California.

2012

On August 5, the *Curiosity* rover safely lands on Mars.

2013

On January 6, the *Curiosity* rover uses the Dust Removal Tool for the first time on a Martian rock called Ekwir 1.



# SOURCE NOTES

- 9 Diana Trujillo, interview with the author, March 12, 2015.  
16 Ibid.  
28 Ibid.

## GLOSSARY

### **aerospace**

the design or operation of aircraft or spacecraft

### **arthritis**

a disease that causes pain in joints such as the elbows and knees

### **chemistry**

the study of the chemical makeup of living things

### **engineers**

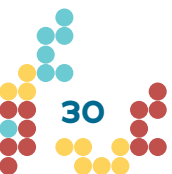
people who use science to design, build, and improve things

### **mechanical engineering**

using physics and materials to create machines

### **microbes**

living things that are too small to be seen without a microscope



# FURTHER INFORMATION

## BOOKS

O'Brien, Patrick. *You Are the First Kid on Mars*. New York: G. P. Putnam, 2009. Read about what it might be like to be an astronaut on Mars.

Rusch, Elizabeth. *The Mighty Mars Rovers: The Incredible Adventures of Spirit and Opportunity*. New York: Houghton Mifflin Books for Children, 2012. Find out more about the Mars rovers that came before *Curiosity*.

Storad, Conrad J. *Mars*. Minneapolis: Lerner Publications, 2010. Explore the characteristics of Mars and its place in the solar system.

## WEBSITES

### **NASA: I Am Diana Trujillo**

<http://mars.nasa.gov/people/info.cfm?id=22822>

Find out more about Diana Trujillo and her work at NASA.

### **NASA: Mars Exploration**

<http://mars.nasa.gov>

Keep up with the latest news of *Curiosity's* findings on Mars.

### **Smithsonian Latino Virtual Museum: Diana Trujillo**

<http://smithsonianlvm.tumblr.com/post/112707531602>

[/celebrating-latinas-in-stem-diana-trujillo-nasa](http://smithsonianlvm.tumblr.com/post/112707531602)

Read about Diana Trujillo's accomplishments at the Jet Propulsion Laboratory.



Expand learning beyond the printed book. Download free, complementary educational resources for this book from our website, [www.lernerresource.com](http://www.lernerresource.com).



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## ABOUT THE AUTHOR

Kari Cornell is a freelance writer and editor who lives with her husband, two sons, and dog in Minneapolis, Minnesota. One of her favorite things to do is to write about people who've found a way to do what they love. When she's not writing, she likes tinkering in the garden, cooking, and making something clever out of nothing. Find out more about her work at [karicornell.wordpress.com](http://karicornell.wordpress.com).



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Have you ever wished you could work for NASA? When Diana Trujillo was little, working for NASA was her greatest dream. She loved to gaze at the stars in the sky. She also enjoyed math and art. Then she learned that engineers use math and art in their work. So Trujillo decided to be a NASA engineer. Although she didn't speak English, she was determined to live her dream.

Trujillo believed in herself enough to move from Colombia to the United States to learn English. After years of hard work, she earned a degree in aerospace engineering. She quickly got a job at NASA and worked on the Mars rover *Curiosity*. She became the lead engineer on her team. Today, Trujillo is a mentor to other women and immigrants. She is also a role model to young scientists. She believes everyone can find a connection between what they love and science.

## STEM trailblazer BIOS

Aerospace Engineer **Aprille Ericsson**

Alternate Reality Game Designer  
**Jane McGonigal**

Astrophysicist and Space Advocate  
**Neil deGrasse Tyson**

Computer Engineer **Ruchi Sanghvi**

Facebook Founder and Internet  
Entrepreneur **Mark Zuckerberg**

Flickr Cofounder and Web Community  
Creator **Caterina Fake**

Genetics Expert **Joanna L. Kelley**

Google Glass and Robotics Innovator  
**Sebastian Thrun**

GoPro Inventor **Nick Woodman**

iPod and Electronics Visionary **Tony Fadell**

Mars Science Lab Engineer **Diana Trujillo**

*Minecraft* Creator **Markus "Notch" Persson**

Nintendo Video Game Designer **Shigeru  
Miyamoto**

SpaceX and Tesla Motors Engineer **Elon Musk**

Theoretical Physicist **Brian Greene**

Theoretical Physicist **Stephen Hawking**

Urban Biologist **Danielle Lee**

YouTube Founders **Steve Chen, Chad Hurley,  
and Jawed Karim**

