Being a Reader™

SECOND EDITION

STUDENT RESPONSE BOOK

A Written Conversation About *The Fantastic Undersea Life of Jacques Cousteau*

Name:

Partner's Name:

What are you thinking about this book so far?

My thoughts:

My partner's response:

My response:

My partner's response:

Excerpt from *The Fantastic Undersea Life of Jacques Cousteau*

Name:

Growing up in France, little Jacques was a weak and sickly boy. Doctors encouraged him to swim to build up his strength. He discovered that he loved the water.

Notes About Jacques Cousteau

Name:

Create a double-entry journal. Label the left-hand section *Traits* and the right-hand section *Motivations*. Use this double-entry journal to record your group's thinking about Jacques Cousteau.

Write About a Quote in *The Fantastic Undersea Life of Jacques Cousteau*

Name:

Read the quotes below. Choose the quote you like the best and circle it. On the lines below, write what you think the quote means and how it adds to your understanding of Jacques Cousteau.

"The sea, once it casts its spell, holds one in its net of wonder forever."

"It fascinated me to do something that seemed impossible."

"The best way to observe a fish is to become a fish."

"When one man, for whatever reason, has the opportunity to lead an extraordinary life, he has no right to keep it to himself."

MOVING MOUNTAINS

TIME for Kids editors

Top Left to Right:
Neil Deshmukh
Riya Tarumanchi
Shubham Banerjee

Bottom Left to Right:
Gitanjali Rao
Xóchitl Guadalupe Cruz López
Fionn Ferreira

What do you imagine when you hear the word *inventor*? Many people picture Thomas Edison holding a lightbulb, or Alexander Graham Bell talking on the first telephone. But not all inventors are in our history books.

New inventions are being dreamed up and designed every day. Today's inventors follow the same path that inventors did in the past: They identify a problem and create something to solve it. That can sometimes mean overcoming obstacles, but inventors always find a way.

***TIME for Kids (TFK)* spoke to six young inventors who have done just that. They are improving the world and making history.**

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Two Helpful Apps

Neil Deshmukh's introduction to artificial intelligence (AI) came three years ago. He wanted to keep his little brother out of his bedroom and away from his Nintendo DS. So Neil built a device that could tell the difference between his brother's face and his own, and lock or unlock the door accordingly. "In the very beginning, I was a tinkerer," Neil told *TFK*.

Now 17, Neil has created two apps. One of them is PlantumAI. It uses data to help farmers detect and diagnose crop disease. The other app is called VocalEyes. It describes photographs out loud for people who are blind or who have low vision.

Neil has a personal interest in the problems he's chosen to tackle with his apps. In India, he saw the impact of crop disease on a village near where his parents were born. And his grandmother has low vision. He created VocalEyes with her in mind.

Neil lives in Pennsylvania. His work has won national and international awards in contests held by companies such as Google, T-Mobile, and General Motors.

—By Rebecca Katzman

A Better Cane

Riya Karumanchi knew a woman who was visually impaired. The woman used a white cane to get around. Riya was surprised that even with the cane, the woman struggled. She often bumped into objects that stood higher than knee level.

Riya assumed the cane came loaded with cutting-edge technology, but she soon learned that wasn't true. "It's just a stick," she says. "My initial thought was like, 'What? How is nobody working on this?'"

Riya decided to work on it herself. At age 14, she engineered a device now called SmartCane. The cane uses sensors to spot obstacles and wet surfaces. It vibrates to alert the user to a dangerous situation. GPS navigation gives directions using vibration patterns and audio. And an emergency button acts as a lifeline, connecting the user to first responders or loved ones.

Riya is now 16 and a high school student in Canada. She's also the founder and CEO of the SmartCane company. She hopes to one day distribute the device through the Canadian National Institute for the Blind.

—By Shay Maunz

Braigo for the Blind

Shubham Banerjee loved Legos as a kid. But instead of using the classic plastic bricks to build castles or spaceships, he used them to create a product that could help people who are blind.

At age 12, Shubham needed to come up with an idea for a science-fair project. He was inspired by a flyer. It asked for donations for the blind. Shubham used the materials in his Lego Mindstorms EV3 robotics kit to create a Braille printer. It was much cheaper and lighter than any other Braille printer available.

A year later, Shubham and his parents founded the company Braigo Labs Inc. He made a new, metal version of the printer with help from investors. That printer would cost $350 to buy. Other Braille printers can cost $2,000.

Shubham is now 18. He's studying business and engineering at the University of California, Berkeley. He has patents for the Braigo printer. But he's not sure what he'll do with them. He says he might sell the company or hold off until after my studies to grow my business."

—By Ellen Nam

Passion for STEM

When she was 7, **Gitanjali Rao** used simple-machine concepts to invent a new kind of folding chair. Her design didn't work, but that didn't stop her from coming up with ideas. Now 14, Gitanjali is an experienced inventor. In 2017, she won the 3M Young Scientist Challenge for Tethys, a handheld device that detects lead in drinking water. Gitanjali invented it after learning about the water crisis in Flint, Michigan. "I really wanted to go after this problem," she says. "Each and every one of us has a right to know what's in our water."

Gitanjali's newest invention tackles cyberbullying. The app, called Kindly, spots and prevents mean online messages. Beta testing began last year. "I'm going to throw a launch party at school," the Lone Tree, Colorado, ninth grader says. "You need a party for everything."

When not in the lab, Gitanjali enjoys teaching. Her "innovation sessions" have attracted about 20,000 kids. "My mom has always told me that I'm good at explaining complicated concepts in a super simple way," she says. "I want to work with students to find and develop their passion for STEM."

—By Jaime Joyce

Warming Up the Water

Xóchitl Guadalupe Cruz López grew up in a home that was often without hot water. So did many of the other residents of her hometown of San Cristóbal de las Casas, in Chiapas, Mexico. When she was 8, Xóchitl created Warm Bath. It's a solar-powered water heater made from recycled materials. "People here have to take baths with cold water. They have a lot of diseases," she says, through an interpreter. "I wanted to do something."

The Warm Bath prototype is made of easy-to-get objects, such as water bottles, a rubber hose, and plastic connectors. It costs about $30 to assemble. Xóchitl is now 11. The next phase of development will study how the heater works at different altitudes in homes across mountainous San Cristóbal.

Xóchitl created Warm Bath with the National Autonomous University of Mexico's adopt-a-talent science program, PAUTA. In 2018, Xóchitl was the first child to receive the university's Institute of Nuclear Sciences Recognition for Women award. When she found out, "the only thing I could think about was telling my parents and my brother," she says.

—By Constance Gibbs

Saving the Seas

Fionn Ferreira, 19, has always loved the sea. As a kid growing up near the ocean, in Ireland, he often went kayaking and volunteered at beach cleanups. And he's always loved science. His two passions met in 2017, when he began looking for an eco-friendly way to remove microplastics from water.

The process Fionn developed won him the 2019 Google Science Fair. His method uses a magnetic liquid called ferrofluid. When added to water, ferrofluid sticks to microplastics. Magnets can then be used to remove the ferrofluid from the water, along with more than 85% of the microplastics, according to Fionn.

Fionn built most of the tools he needed to test his method at home. There were hiccups along the way. "Some worked, some didn't, some things blew up, some caught fire," he says. "The fuses of our house were constantly blowing!"

Fionn wants to continue his research and inspire more kids to get involved in STEM. "The more people who have engaged in science," he says, "the more ideas we generate."

—By Karena Phan

Notes About "Moving Mountains"

Name:

Choose one innovator from the article "Moving Mountains" to write about. Read the section of the article about that innovator, and then write about the innovator below. Include the innovator's name, what they did, their traits and motivations, and why you think what they did is important.

My Thinking About Innovators

Name:

Choose two innovators that we have discussed to compare. Write about ways that they are the same and ways that they are different. Remember to use evidence from the texts to support your thinking.

Write About A Reading Strategy

Name:

Write the title of the text and the author's name. Write which reading strategy you used and how they helped you better understand what you read.

A Written Conversation About *A Computer Called Katherine*

Name:
Partner's Name:

What are you thinking about the story?

My thoughts:

My partner's response:

My response:

My partner's response:

Notes About Katherine Johnson

Name:

Create a double-entry journal. Label the left-hand section *Traits* and the right-hand section *Motivations*. Use this double-entry journal to record your group's thinking about Katherine Johnson.

A Time Line from *A Computer Called Katherine*

Name:

Time Line

1915: NACA (National Advisory Committee for Aeronautics) is created.

August 26, 1918: Katherine Coleman is born in White Sulphur Springs, West Virginia.

1928: Katherine starts West Virginia State High School at age ten.

1932: Katherine begins studying at West Virginia State College at age fifteen.

1937: Katherine graduates from college with a Bachelor of Science in Mathematics and French (summa cum laude) at age eighteen.

1939: Katherine marries James Francis Goble.

1953: Katherine begins working at NACA's Langley Aeronautical Laboratory (later known as Langley Research Center).

1956: Katherine's husband, James, dies of a brain tumor.

October 1, 1958: NACA becomes NASA (National Aeronautics and Space Administration).

1959: Katherine marries Lieutenant Colonel James Johnson.

May 5, 1961: Alan Shepard's spacecraft follows the flight trajectory Katherine helped plot, making him the first American in space.

February 20, 1962: John Glenn becomes the first American to orbit Earth after his spacecraft follows the trajectory verified by Katherine.

August 6, 1965: The Voting Rights Act of 1965 enforces voting rights for people of all races in all states.

July 16, 1969: Apollo 11 blasts off following the flight path designed and approved by Katherine.

July 20, 1969: Neil Armstrong is the first person to walk on the moon.

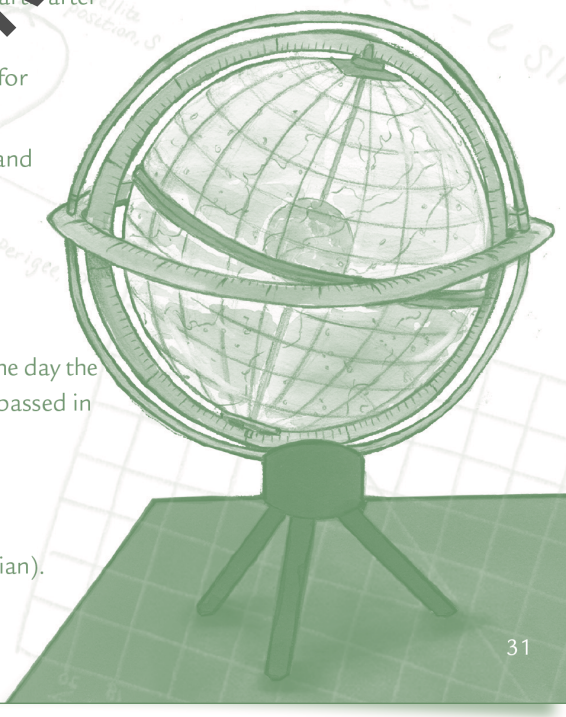
July 24, 1969: After following Katherine's flight path back to Earth, the Apollo 11 crew splashes down in the Pacific Ocean.

1973: Congress approves August 26 as Women's Equality Day (this is the day the Nineteenth Amendment—giving women the right to vote—was passed in 1920 and is also Katherine's birthday).

1986: Katherine retires after working for NASA for thirty-three years.

November 24, 2015: President Barack Obama awards Katherine the Presidential Medal of Freedom (the highest honor given to a civilian).

February 24, 2020: Katherine Johnson passes away at the age of 101.



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A Written Conversation About Themes

Name:

Partner's Name:

What do you think is an important lesson you can learn from the innovators we have studied that you can apply to your own life? Why do you think that?

My thoughts:

My partner's response:

My response:

My partner's response:

Ways Innovators Can Make a Difference in People's Lives

Name:

Write about ways innovators can make a difference in people's lives. Be sure to use evidence from the texts we have read to support your thinking.

My Biography Outline 1

Name:

Write the name of the subject of your biography.
Then write notes for each of the sections of the biography.

Subject of the biography:

Orientation:

Series of events:

Evaluation:

Notes About an Innovator

Name:

**Write the name of the innovator you researched on the line below.
Read the questions and write a few notes on the lines below each question.
You will use these notes to create an outline for a biography.**

Name of the Innovator: _____

1. What are the traits of this innovator? What are some words to describe this person?

2. What are some important events in this person's life?

3. What are some important places for this innovator? If you were to write a biography of this person, where would the setting be? Why is that setting important?

4. Why is the innovator you chose important? What are the reasons this innovator is important?

My Biography Outline 2

Name:

Write the name of the subject of your biography.
Then write notes for each of the sections of the biography.

Subject of the biography:

Orientation:

Series of events:

Evaluation: