Discussion points, activities, and writing prompts to help educators use Whoosh! Lonnie Johnson's Super-Soaking Stream of Inventions

About the Book

*... inspiring..." Publishers Weekly, starred review

* "Delightfully child-friendly. . ." Kirkus Reviews, starred review

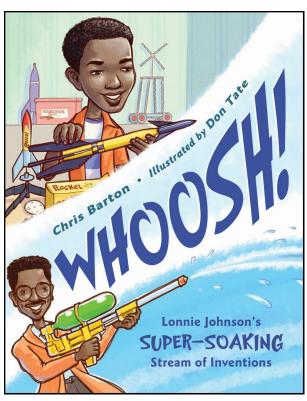
Lonnie Johnson was always building things. As a kid he made rockets. As a teenager he built a robot from scratch. As an adult he worked for NASA's Jet Propulsion Laboratory on the *Galileo* orbiter and probe that studied Jupiter.

And then one day, while hooking up his latest invention to the bathroom sink to test it out. . .

WHOOSH!

Water shot across the room. "This would make a great water gun," Lonnie thought.

Meet the innovative engineer who unexpectedly invented one of the most popular toys of all time—the Super Soaker.



978-1-58089-297-1 E-book editions available

Aligned to the Common Core & Next Generation Science Standards Grades 3-4

About the Author & Illustrator



Chris Barton is the best-selling author of several books for children, including *Shark vs. Train* (Little, Brown) and *The Day-Glo Brothers: The True Story of Bob and Joe Switzer's Bright Ideas and Brand-New Colors*. He lives in Austin, Texas.

Visit Chris online at www.chrisbarton.info.



Don Tate is the illustrator of *The Cart That Carried Martin* and the author of *It Jes' Happened:* When Bill Traylor Started to Draw (Lee & Low). He is both author and illustrator of *Poet: The Remarkable Story of George Moses Horton* (Peachtree). He lives in Austin, Texas.

Visit Don online at dontate.com

Common Core Alignment for Grades 3-4

Grade 3: ELA. RI.3.1-3, 7, 8, 10

Grade 4: ELA. RI.4.1-5, 8, 10

Next Generation Science Standards Alignment for Grades 3-4

Grades K-2: K-2-ETS1-1 Engineering Design

Grades 3-5: 3-5-ETS1: Engineering Design

Discussion

- 1. Define the following terms in your own words, using the text for reference.
 - Propulsion
 - Compression
 - Prototype
 - Invention
- 2. To become an inventor, what steps did Lonnie Johnson have to take?
- 3. What did Lonnie Johnson need in order to get his robot, Linex, to work?
- 4. How did Lonnie Johnson's childhood and studies help him with his work at NASA?
- 5. Discuss the elements of inventing that Lonnie had to consider when creating the Super Soaker:
 - Weight
 - Capacity
 - Force
 - Usability
 - Cost
- 6. Lonnie Johnson was told that he wouldn't make a very good engineer. Why did he keep trying? What other setbacks did Lonnie have to overcome?
- 7. What lessons from Lonnie's work and life can we apply to our own lives?
- 8. Ask students, "Would your parents let you experiment at home the way Lonnie's did? If no, what alternatives to experimenting do you have?"
- 9. Why was it so hard for Lonnie to sell the Super Soaker?
- 10. What else has Lonnie Johnson invented?
- 11. What is Lonnie Johnson focusing on now?

Activity

- 1. Read Chris Barton's Author's Note. He learned about Lonnie Johnson from a few librarians who had attended a seminar in which they were asked to draw a picture of what they thought a scientist looked like. Ask students to do the same. Discuss the drawings and students' ideas about scientists.
- 2. Research the Galileo project. How was Lonnie's work essential?
- 3. Look up R-12. What is it and why is it bad for the environment?
- 4. Provide the classroom with an assembly kit (model airplanes, rockets, etc.), or break the class into groups and give each group a kit. Remove one component and ask students to work together to come up with a potential replacement or workaround—similar to what Lonnie Johnson did with his robot, Linex.
- 5. Provide students with materials (they can be anything: old clothes, nuts and bolts, fishing line, paper, beads, etc.) and a few tools. Have them use their imaginations and build something useful. Discuss what their inventions are and what the students want to accomplish with them. They may not have the materials they need. Discuss what it might take to achieve their ideas.

Learn More

Find out more about Lonnie Johnson and his work by visiting the following websites:

<u>Johnson Research & Development</u>. This is the company Lonnie Johnson founded to research and develop clean energy sources.

<u>NBC News</u>. Watch Lonnie Johnson on NBC News discussing his work and how he's encouraging students to explore science and robotics.

<u>CBS Sunday Morning</u>. Lonnie Johnson speaks with Mo Rocca about the Super Soaker and accidental inventions.

<u>Time Magazine</u>. Read more about Lonnie Johnson in this article published in 2000.

<u>Lemelson Center for the Study of Invention and Innovation</u>. Lonnie Johnson was featured on the Smithsonian's Lemelson Center website.

<u>TedXAtlanta</u>. Listen to Lonnie Johnson's inspiring talk "Revolutionary Designs for Energy Alternatives" on YouTube.

<u>The Black Inventor</u>. Read Lonnie Johnson's profile on this website dedicated to the scientific works of African Americans.

What People are Saying

- ★ "A delightfully child-friendly and painfully necessary diversification of the science field." Kirkus Reviews
- ★ ". . . tailor-made for a young audience. . ." Publishers Weekly

"A testament to perseverance. . ." - American Scientist

"This upbeat tribute makes an engaging and inspiring addition to STEM collections." - Booklist

". . . engaging and informative. . ." – School Library Journal

"[An] upbeat, you-can-do-it attitude." - The Horn Book

"A great depiction of an inventor with the 'right stuff'." - NSTA Recommends

"[An] appealing, inspiring picture-book biography. . ." - Shelf Awareness

Parents 10 Best Children's Books of 2016

A 2017 Children's & Teen Choices Book Award finalist

New York Public Library's Best Books for Kids 2016

Chicago Public Library's Best Informational Books for Younger Readers

Kirkus Best Books of 2016

Cook Prize finalist

Notable Social Studies Trade Books for Young People

ILA Children's Choices Reading List

CCBC Choices List

2017-2018 Texas Bluebonnet Award Masterlist

2017-2018 Maine Chickadee Book Award nominee

2017-2018 Maryland Black-Eyed Susan Book Award nominee

2017-2018 Rhode Island Children's Book Award nominee

2017-2018 North Carolina Children's Book Award nominee

2017-2018 Washington Towner Book Award nominee

2017-2018 Vermont Red Clover Book Award nominee

2017-2018 Pennsylvania Young Readers Award nominee

2017-2018 Read On Wisconsin finalist

2018-2019 Volunteer State Book Award nominee

2017 Maryland Blue Crab Young Readers Award Winner transitional nonfiction