



North Dakota Department of Public Instruction  
Kirsten Baesler, State Superintendent  
600 E. Boulevard Avenue, Department 201  
Bismarck, ND  
Division of Student Support and Innovation

# STEAM and Literacy

## 'STEAM'ing Up Summer Reading

Beth Larson-Steckler, STEAM Coordinator  
701-328-3544  
[esteckler@nd.gov](mailto:esteckler@nd.gov)

# Goals of STE'A'M

- 1. Engage Students Interest in STEM at An Earlier Age**
- 2. Increase Proficiency in These Areas**
- 3. Entice Students to Pursue Careers in the STEM Fields**

# The Great Debate

# Integrating Literature into STEAM

- **Peaking Youth's Interests**
- **Reinforcing Language**
- **Reinforcing Concepts**
- **Engaging Youth in Problem Solving**

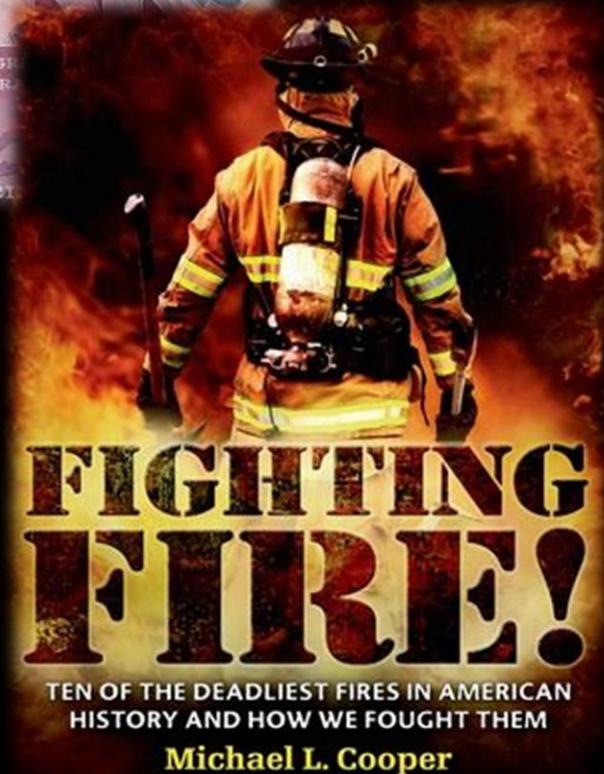
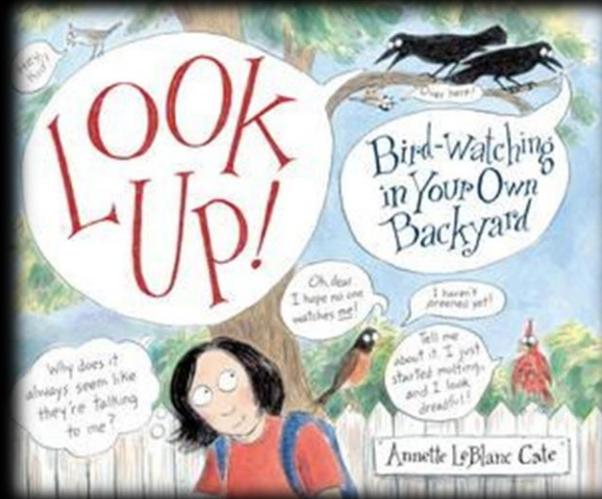
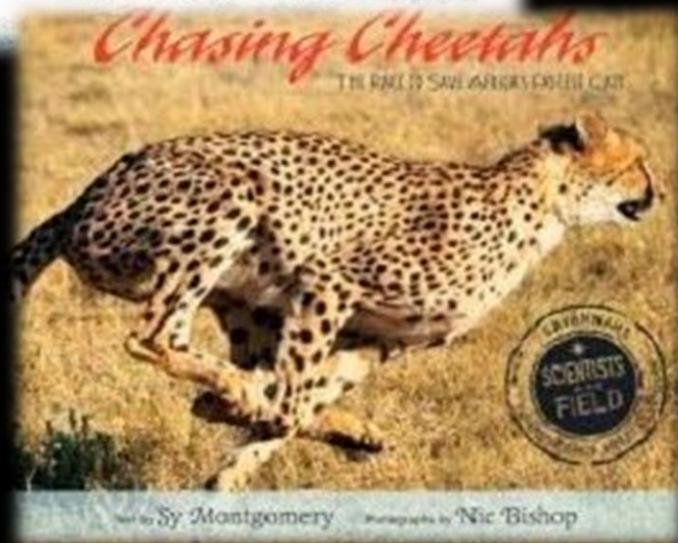
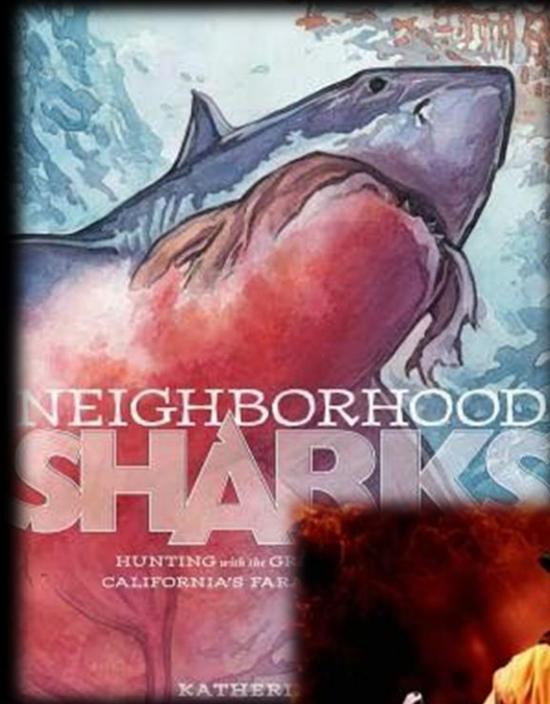
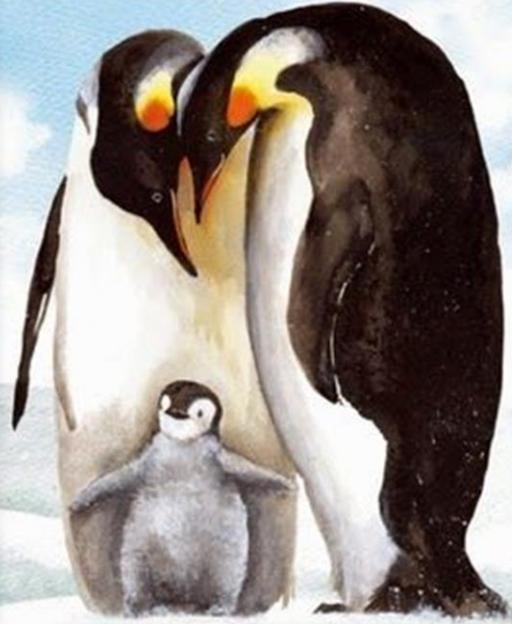
*“We need to engage children in wanting to learn, wanting to solve programs. One way we can interest them is through literature.”*



Dr. Ann Assad, associate professor of mathematics and statistic at Austin Peay State University

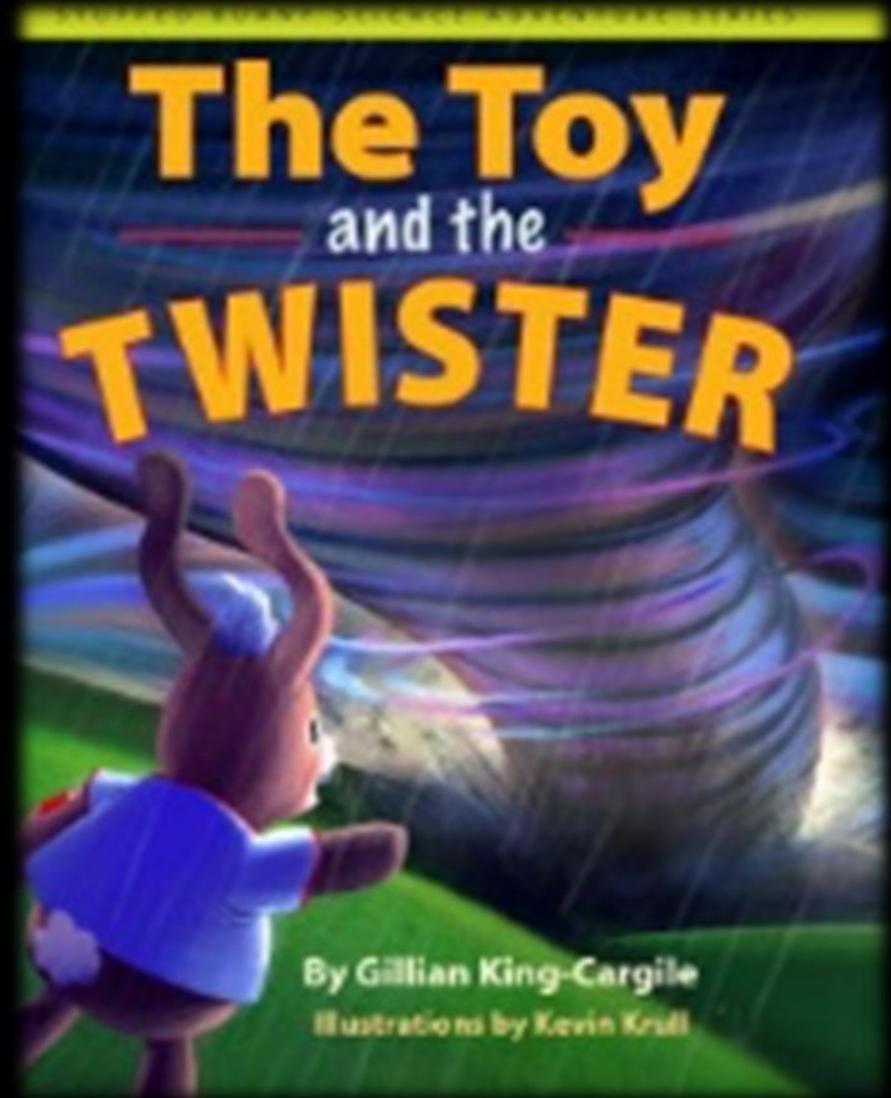


# Animal Teachers



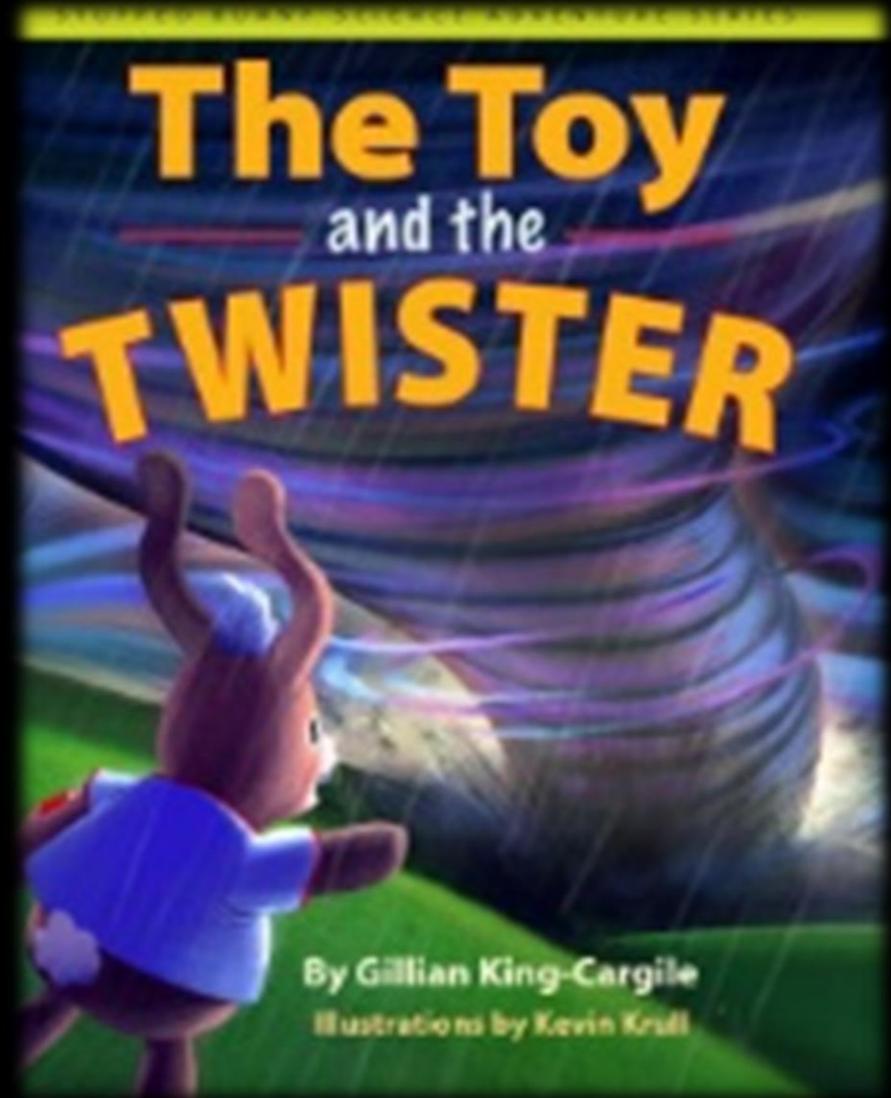
# The Toy and The Twister

by Gillian King-Cargil



# Reinforcing Language

- Hazy
- Gravity
- Mist
- Debris
- Hail
- Conducting



# Reinforcing Concepts

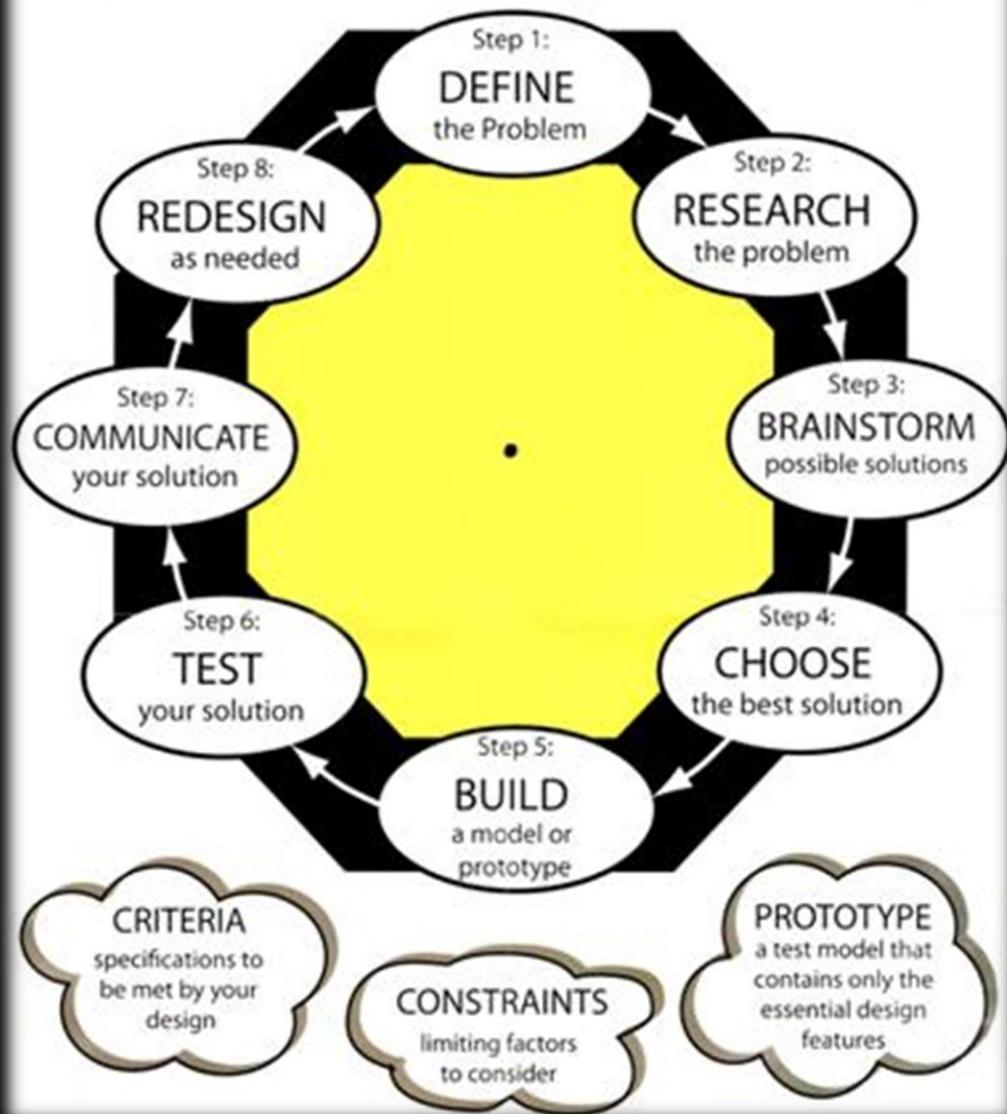
- Create a Jarnado



# Problem Solving

- **Read a Book and Identify the Problem**
- **Brainstorm**
- **Design a Solution**
- **Get Feedback**
- **Improve Design**
- **Share**

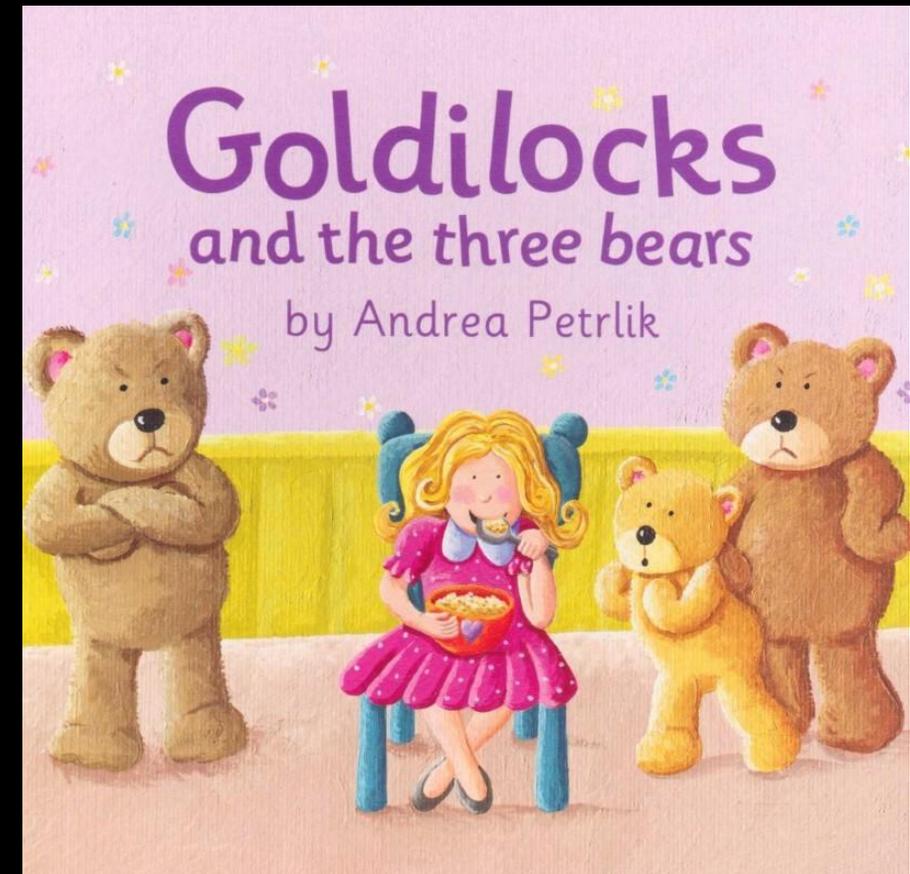
# Engineering Design Process



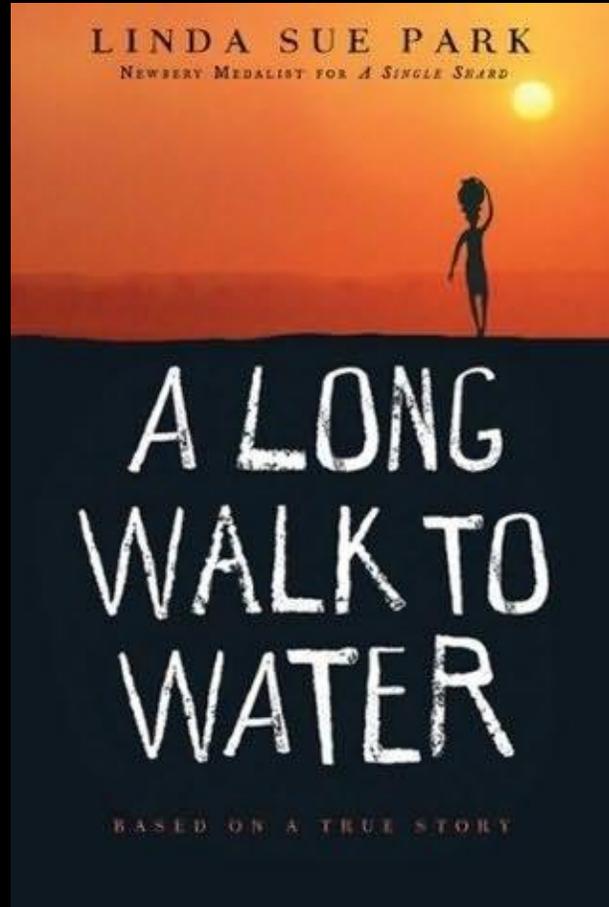
# Goldilocks & the Three Bears

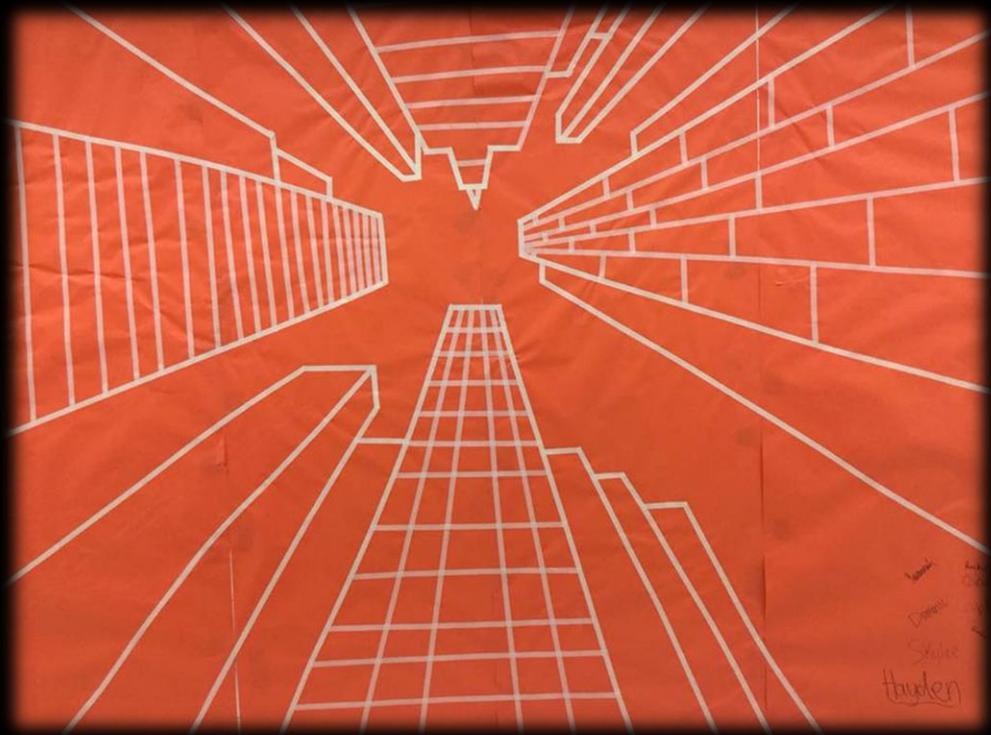
Design a:

1. Security system for the door
2. Escape method for Goldilocks
3. A stronger chair



The bears are your customers!





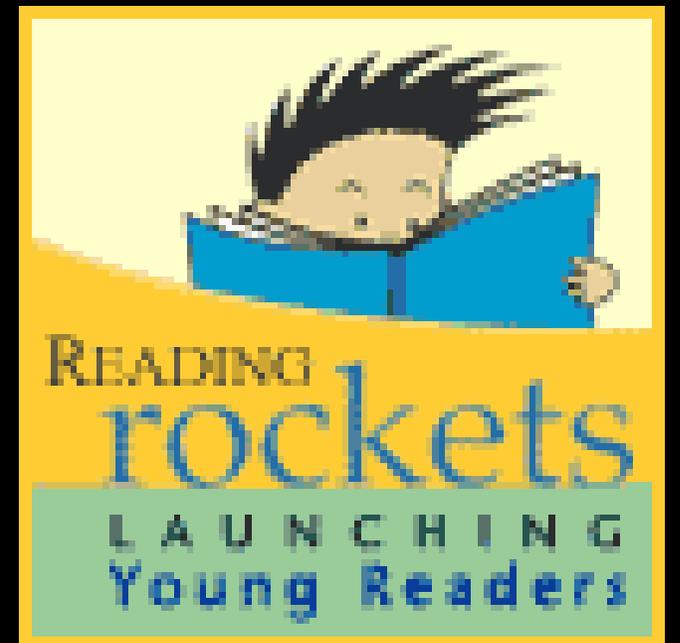
SCIENCE • TECHNOLOGY  
ENGINEERING • MATH  
**STEM READ**  
NORTHERN ILLINOIS UNIVERSITY



A COLLECTION OF ELEMENTARY STEM DESIGN  
CHALLENGES BASED CHILDREN'S LITERATURE  
[2013 Edition – A Continual Work In Progress]

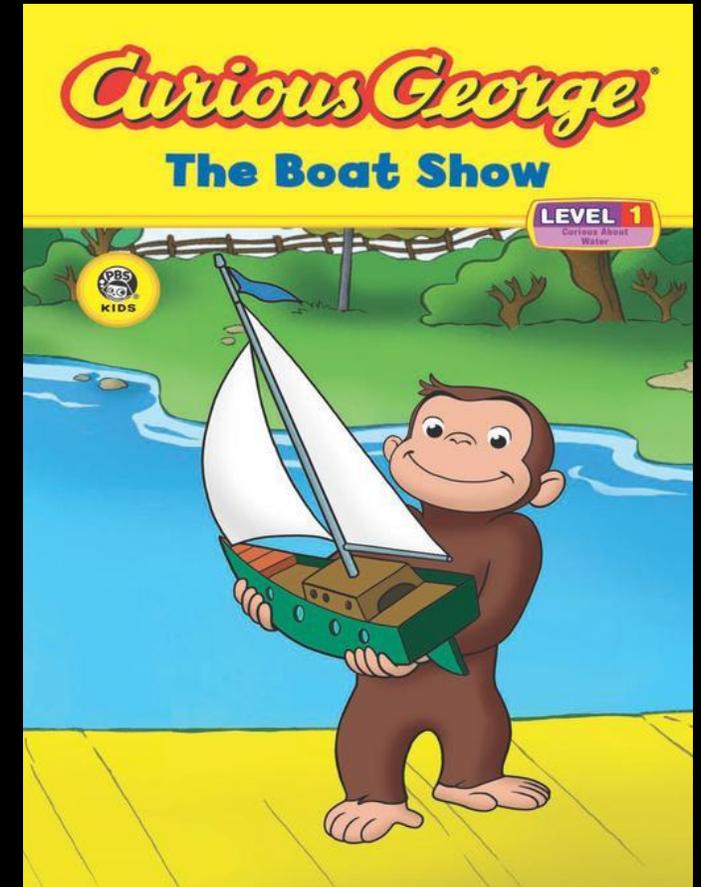
# Resources

Teaching  
**STEM**  
through  
Fairy Tales



# A Collection of Elementary STEM Design Challenges Based Children's Literature

- *The Three Billy Goats Gruff*
- *Yertle the Turtle*
- *Curious George and the Hot Air Balloon*
- *Dogzilla*
- *Humpty Dumpty*
- *Franklin is Lost*
- *Curious George: The Boat Show*
- *Huff and Puff* (Version of the *Three Little Pigs*)





Public libraries throughout northern Illinois are partnering with Northern Illinois University's STEM Read to provide year-round programs for K-12 readers. Students, educators, and librarians can join their virtual community to read selected science fiction books, watch online talks from STEM experts and authors, play games that explore the science behind the fiction, and write collaborative sci-fi stories. STEM Read also hosts live events and interactive field trips and offers free book extensions that provide standards-aligned lessons and activities for educators and librarians. Book explorations include James Dashner's "The Maze Runner," Kat Falls' "Dark Life," Aaron Reynold's "Carnivores," Andrea Beaty's "Rosie Revere, Engineer," and many others.

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

# Fairy Tales

- *Henny Penny*
- *Stone Soup*
- *The Princess and the Pea*
- *Rapunzel*
- *The Golden Goose*
- *Little Red Riding Hood*
- *Jack and the Beanstalk*
- *Goldilocks and the Three Bears*



# Reading Rockets

- Reading and writing occurs across the curriculum, including the sciences. Schools today are placing more emphasis on STEM: Science, Technology, Math and Engineering in the elementary classroom. Learn more about how to strengthen literacy, inquiry, and problem-solving skills, and how to connect kids with high-quality nonfiction and informational books.

<http://www.readingrockets.org/reading-topics/stem-literacy>

# Resources

- NSTA Books & Resources <http://www.nsta.org/publications/ostb/>
- STEM Books for Children  
<http://www.theeducatorsspinonit.com/2014/11/stem-books-for-children.html>
- Science Books for Kids  
<http://books.growingwithscience.com/beginning-readers/>

