

Invention Convention: Great Books for Lively Science

by | Judy Bradbury

• **Keep 'em Reading** •

Grades
1-2, 3-5

Want to infuse your school's science fair with a bit more zip and attitude? One that wannabe Ben Franklins, Thomas Edisons, and Bette Nesmith Grahams (the inventor of Liquid Paper) will embrace? Then get every student on board with an Invention Convention!

Tagging your science fair with a snazzy moniker like this, whether the event is school-wide or a smaller-scale library or classroom project, is a great way to start a buzz. But of course, it will take more than spin on the name to get every last student excited and eager to participate.

As is so often the case, the affected apathy of many hesitant students is a shield for bewilderment and an overwhelming sense of dread. *How can I invent something?* wonders the just-turned-six first grader, the third grade reluctant reader, or the recalcitrant fifth grader for whom science hits the highest degree on the snooze-o-meter.

If you want to pull off a rocking science fair of seismic proportions, you must first erase the fear factor. And what better way to put students at ease than with inspiring stories?

Fearless Minds

Launch your Invention Convention by reading aloud and discussing the endearing, affirming picture book *Science Fair Day*, from the team whose books explore touchstone experiences of grade school (*School Picture Day*, *Teacher Appreciation Day*, *Pajama Day*, and *Book Fair Day*). Author Lynn Plourde and illustrator Thor Wickstrom will reassure students with their story of the ups and downs of a science fair in Mrs. Shepherd's classroom, and students will take solace in the gentle humor of experiments gone awry. Encouragement for advancing a plan and forging ahead despite inevitable setbacks and prickly predicaments is



craftily interwoven throughout the book, and its message about the satisfaction of accomplishment is effective. Grades 1-3.

Who Came Up with That?

You can also help diminish students' concerns by bringing sizzle to science. Focus on one of its coolest factors: the innovation of invention. When you tap into the tickle of discovery, apprehension will slink out of the room. *You really think I can invent something?* You betcha! Explore the luck, pluck, and satisfaction of quirky inventors through the ages with this batch of books that is sure to put even the most science-leery young minds at ease.

Many of us know that the first chocolate chip cookie was the result of a baker's mistake. But how about artificial sweeteners? Raisins? Vinegar? What about other accidental discoveries, like fabric dye? Ever wonder who came up the idea for cel-

Keep 'em Reading

lophane? And what about microwave cooking? Find out about all these “mistakes” and more by sampling the short and spiffy blurbs in *Accidents Can Happen: Fifty Inventions Discovered by Mistake* written by Charlotte Foltz Jones and illustrated with amusing line drawings by John O'Brien. The author/illustrator team explores even more calamities that resulted in useful creations in the equally appealing *Mistakes That Worked: 40 Familiar Inventions and How They Came to Be*. Suitable for Grades 2–5, both of these books are certain to warm up the thinking caps.

Another irresistible science-accident success story is *The Day-Glo Brothers: The True Story of Bob and Joe Switzer's Bright Ideas and Brand-New Colors* written by Chris Barton and illustrated by Tony Persiani. This Sibert Honor book begins with the wry observation that the ancient Egyptians couldn't have made the pale pyramids snazzier by painting them Day-Glo green, nor could Lady Liberty have worn an audacious Fire Orange outfit, even if they wanted to. Why? Because fluorescent colors weren't available then! It took Bob and Joe Switzer's bright ideas and stick-to-it attitude to bring us the dazzling intensity of fluorescent hues. Read the details in the lively biography of these siblings' fascinating lives. Gain a sense, too, of the qualities the Switzer brothers possessed that served them well as they made their way—accidentally—to glowing success. To view an animation of how regular and daylight fluorescence work, go to www.charlesbridge.com/day-glo-animation.html, and visit http://www.charlesbridge.com/client/client_pdfs/downloadables/DayGlo_Activity_Guide.pdf for a downloadable activity and discussion guide. Grades 3–5.

Not all inventions save the world, better mankind, or dramatically alter the way we go about our daily lives. Some inventions are silly, and some are just downright fun. Take bubble gum, for instance. *Pop! The Invention of Bubble Gum* by Meghan McCarthy chronicles the curiosity and commitment of a young accountant who worked in an office above a candy factory. It's a light-hearted tale accompanied by illustrations rendered in bright acrylics, and back matter packed with additional facts about gum and the little-known inventor, Walter Diemer. Grades 2–4.

Most kids are aware that Benjamin Franklin was an inventor as well as a statesman. They know about the key and the kite (and they know not to try that experiment anytime soon). Author-illustrator Gene Barretta goes a step beyond that familiar tale, cleverly demonstrating how Franklin's creative-yet-practical ideas have transcended time and continue to affect the lives of modern people in *Now & Ben: The Modern Inventions of Benjamin Franklin*. Barretta also penned *Neo Leo: The Ageless Ideas of Leonardo da Vinci*, similar in style to his book about Franklin. It's another accessible introduction to one of the great minds in history—a mind that was crammed with inventive ideas, many of which wouldn't be realized until hundreds of years after his death. Da Vinci conceived of contact lenses, hang gliders, single-span bridges, and even robots, to name just a few improvements and conveniences he contemplated. Grades 2–3.

How Do They Do That?

Garner interest in inventions by focusing on how ordinary things work. Barretta was inspired to write about inventors because, he says, “Kids get excited when they see how something useful or important in our everyday life actually came from elements or parts that are very simple or common.” Spark ideas for “everyday” inventions by pointing to conveniences in our modern lives. Examples abound in *Transformed: How Everyday Things Are Made* by Bill and Jim Slavin. What youngster won't be drawn to pithy explanations accompanied by simple, child-friendly illustrations of how CDs, neon signs, licorice, and marbles are created? Get the marbles rolling in students' heads by pairing this book with David Macaulay's *The New Way Things Work*, a visually compelling compendium detailing how machines do their work. As the front cover boasts, the author seems to cover it all, “from Levers to Lasers, Windmills to Web Sites.” Macaulay makes clever—and credible—connections between such unrelated things as zippers and pyramids. And that windmill? Macaulay considers it to be related to the dentist's drill! 400 pages of amazing stuff for Grades 2–5.

Read the hilarious “docu-drama” *Mary Smith* by A. U'Ren to learn about the “knocker up” whose job, in the early 1900s before alarm clocks came into widespread use, was to wake her neighbors in town with a simple “tool.” Beware! This story may spur the invention of additional innovated uses for the much-loved peashooter! Grades 1-2.

For boiled-down bios that deftly offer insight into the personalities of both well known and obscure inventors, turn to *So You Want To Be An Inventor?* written by Judith St. George and illustrated by David Small in the style that earned him a Caldecott Medal for this team’s companion book, *So You Want To Be President?* Students may be surprised to learn that Joseph Henry invented a telegraph system years before Samuel F. B. Morse was recognized as the inventor of the device. Novice scientists may be surprised to learn that a glamorous movie star, Hedy Lamarr, joined forces with a friend to invent a system for guiding torpedoes by radio signals so the United States could thwart Hitler.

For an unforgettable, in-depth immersion into the scope of premier inventor Leonardo da Vinci’s contributions to science as well as the arts, ideal for older readers, be sure to delve into the visually appealing *Leonardo: Beautiful Dreamer* by Robert Byrd. Every nook and corner of this lushly illustrated book celebrates the genius of the man who liked to ask questions and pondered “What if?” Grades 3-5.

I Could Do That!

After immersing students in stories of invention, get their wheels turning on what *they* might create. Read the deceptively simple picture books, *Not A Box* and *Not A Stick* by Antoinette Portis and *The Clever Stick* by John Lechner. These books offer a jumping-off point for creative brainstorming sessions that explore the power of potential, and beg the question, “What if?”

Students will be amazed to discover how “What if” questions guided the accomplishments of their contemporaries. *Kids Inventing! A Handbook for Young Inventors* offers intriguing stories about truly amazing inventions developed by youth. Author Susan Casey guides the reader step-by-step through the mental processes that led young sci-

entists to inventive success. The book even discusses patents, applying for a trademark, and preparing to manufacture a product. It’s pitch-perfect for your super-serious scientists! Grades 4-6.

Think a patent is out of the realm of possibility for youngsters? Think again. Ten-year-old Becky Schroeder, who invented Glo-sheet paper so people could write in the dark, was the youngest female ever to receive a U. S. patent. Her story, along with that of a corps of other resourceful lasses, is told in *Girls Think of Everything: Stories of Ingenious Inventions by Women* by Catherine Thimmesh. Grades 4-6.

The back-story on inventions can be captivating for youngsters. For a light and amusing peek at inventions—114 of them, from A to Z, and throughout history—browse *The Kid Who Invented the Popsicle and Other Extraordinary Stories Behind Everyday Things* by Don L. Wulffson. From the story behind Fig Newtons to the tale of wigs and Velcro, this book will pique interest and inspire the imagination. Grades 3-5+. For additional motivation, display pertinent issues of kids’ glossies, such as *Calliope*, *Boys’ Quest*, *Muse*, and *Cobblestone* around the room.

As you read about inventors, discuss when they lived. Consider these amazing people in the context of history. What was going on in the world during the time they were experimenting? How might this have influenced their work? Construct a simple time line to circle the room. Place the timeline within easy reach, and as you read about inventors, encourage students to attach the inventors’ names and an illustration of each inventor’s claim to fame to the appropriate date on the timeline. Notice which inventors were alive at the same time in history. Where did they live? Is it possible they would have known each other? What might they have talked about if they met at a bus stop? Might they have enjoyed working together on an invention?

Throughout the Invention Convention unit, keep kids laughing by focusing on the fun of invention. Recite poems from the hilarious *Here’s What You Can Do When You Can’t Find Your Shoe: Ingenious Inventions for Pesky Problems* written by Andrea Perry and illustrated in suitable style by Alan Snow. It’s a sure bet that there are plenty of students in your school who’d spend their month’s allowance on a Veggie Be Gone . . . and what child—or adult—wouldn’t like to own an Acme Super Spider Spotter? Grades 1-4.

You Did It!

When the blue ribbons have been awarded, the proud parents and grandparents have been sent home, and your inventors' displays are resting quietly in their corners, cap off your successful Invention Convention by re-reading *Science Fair Day* with your students. Then sit back, put your feet up on that nifty invention, the trashcan ottoman, and take a moment to marvel at the creative and fearless cohort of budding scientists in your midst. May their incredible minds continue to amaze!

Bibliography

- *Accidents May Happen: Fifty Inventions Discovered by Mistake* by Charlotte Foltz Jones. Illustrated by John O'Brien. Delacorte, 1996.
- *The Clever Stick* by John Lechner. Candlewick, 2009.
- *The Day-Glo Brothers: The True Story of Bob and Joe Switzer's Bright Ideas and Brand-New Colors* by Chris Barton. Illustrated by Tony Persiani. Charlesbridge, 2009.
- *Girls Think of Everything: Stories of Ingenious Inventions by Women* by Catherine Thimmesh. Illustrated by Melissa Sweet. Houghton Mifflin, 2000.
- *Here's What You Do When You Can't Find Your Shoe: Ingenious Inventions for Pesky Problems* by Andrea Perry. Illustrated by Alan Snow. Atheneum, 2003.
- *The Kid Who Invented the Popsicle and Other Extraordinary Stories Behind Everyday Things* by Don L. Wulffson. Puffin, 1999.
- *Kids Inventing! A Handbook for Young Inventors* by Susan Casey. Josey-Bass, 2005.
- *Leonardo: Beautiful Dreamer* by Robert Byrd. Dutton, 2003.
- *Mary Smith* by A. U'Ren. Farrar, Straus, Giroux, 2003.
- *Mistakes That Worked: 40 Familiar Inventions and How They Came to Be* by Charlotte Foltz Jones. Illustrated by John O'Brien. Doubleday, 1994.
- *Neo Leo: The Ageless Ideas of Leonardo da Vinci* by Gene Barretta. Holt, 2009.

- *The New Way Things Work* by David Macaulay. Illustrated by Neil Ardley. Houghton Mifflin, 1998.
- *Not A Box* by Antoinette Portis. HarperCollins, 2006.
- *Not A Stick* by Antoinette Portis. HarperCollins, 2007.
- *Now & Ben: The Modern Inventions of Benjamin Franklin* by Gene Barretta. Holt, 2006.
- *Pop! The Invention of Bubble Gum* by Meghan McCarthy. Simon & Schuster, 2010.
- *Science Fair Day* by Lynn Plourde. Illustrated by Thor Wickstrom. Dutton, 2008.
- *So You Want To Be an Inventor?* by Judith St. George. Illustrated by David Small. Philomel, 2002.
- *So You Want To Be President? Revised and Updated Edition* by Judith St. George. Illustrated by David Small. Philomel, 2004.
- *Transformed: How Everyday Things Are Made* by Bill Slavin with Jim Slavin. Illustrated by Bill Slavin. Kids Can Press, 2005.

❖ ❖ ❖

Judy Bradbury (www.judybradbury.com) is a reading specialist and the author of the Children's Book Corner series. She teaches Children's Literature at Medaille College and presents workshops nationally on the topic of reading aloud to children. Her latest resource is *The Read-Aloud Scaffold: Best Books to Enhance Content Area Curriculum*, released this spring *Libraries Unlimited/ABC-CLIO*.

