



Invention and the Creative Process Resource List for Grades 5 through 8

The Resources in this document can be used with the Invention and the Creative Process Curriculum Packet for grades 5 through 8.

Books

Non-fiction and Biography

- The Boy Who Harnessed the Wind: Young Readers Edition, 2015 by William Kamkwamba (Author), Bryan Mealer (Author), Anna Hymas (Illustrator).
When a terrible drought struck William Kamkwamba's tiny village in Malawi, his family lost all of the season's crops, leaving them with nothing to eat and nothing to sell. William began to explore science books in his village library, looking for a solution. There, he came up with the idea that would change his family's life forever: he could build a windmill.
- Feynman, 2013 by Jim Ottaviani (Author), Leland Myrick (Illustrator).
In this graphic novel biography, the author presents the larger-than-life exploits of Nobel-winning quantum physicist, adventurer, musician, world-class raconteur, and one of the greatest minds of the twentieth century: Richard Feynman.
- Genius!: The Most Astonishing Inventions Of All Time, 2015 by Deborah Kespert (Author).
This solid overview of technological milestones features over twenty inventors and their creations. At least two spreads about each give basic facts, about, say, Stephanie Kwolek and Kevlar, followed by expansions and updates to the technology, with numerous photos and other illustrations throughout.
- Girls Think of Everything: Stories of Ingenious Inventions by Women, 2002 by Catherine Thimmesh (Author), Melissa Sweet (Illustrator).
In kitchens and living rooms, in garages and labs and basements, even in converted chicken coops, women and girls have invented ingenious innovations that have made our lives simpler and better. Their creations are some of the most enduring (the windshield wiper) and best loved (the chocolate chip cookie). What inspired these women, and just how did they turn their ideas into realities?
- Invent It!, 2017 by Rob Beattie (Author).
What should kids do when they have an idea? Put it into action! This fun and informative book takes budding inventors through the entire creative process—from brainstorming, designing, and prototyping, to patenting, manufacturing, and marketing. It is packed with all the tools and tips needed to turn a concept into reality!
- Inventor, Engineer, and Physicist Nikola Tesla, 2017 by Katie Marsico (Author).
As a child, Nikola Tesla saw a picture of a waterfall and imagined an invention that would turn the water's energy into electricity. Later, he invented the water wheel, which turned water power into usable energy. As a young adult, Tesla spent his spare time experimenting with electrical equipment. He worked for inventor Thomas Edison, improving power plants and machines that ran on direct current electricity.

- Mistakes That Worked: 40 Familiar Inventions & How They Came to Be, 1994 by Charlotte Foltz Jones (Author), John O'Brien (Illustrator).
Popsicles, potato chips, Silly Putty, Velcro, and many other familiar things have fascinating stories behind them. In fact, dozens of products and everyday items had surprisingly haphazard beginnings.
- The Next Wave: The Quest to Harness the Power of the Oceans (Scientists in the Field Series), 2018 by Elizabeth Rusch (Author).
Transferring ocean wave action into electricity (without damaging collection equipment or harming marine life) is a significant engineering challenge with a potentially big financial payoff. Rusch captures the determined, entrepreneurial spirit of the profiled engineers as well as the need for creative problem-solving and ingenuity.
- Shoes for Everyone: A Story about Jan Matzeliger, 1986 by Barbara Mitchell (Author).
A biography of the half-Dutch/half-black Surinamese man who, despite hardships and prejudice, invented a shoe-lasting machine that revolutionized the shoe industry.
- So You Want to Be an Inventor?, 2005 by Judith St. George (Author), David Small (Illustrator).
Features some of the world's best-known inventors-Thomas Edison, Benjamin Franklin, Eli Whitney-as well as lesser-known geniuses like Georges de Mestral (inventor of Velcro), Wilhelm Roentgen (inventor of X rays), and Hedy Lamarr (inventor of a system that became the basis for satellite communication-who knew?). Whether you're a dreamer or a loner, a copycat or a daredevil, this book might just inspire readers to invent something that could change the world!
- The World's Oddest Inventions (Library of Weird), 2015 by Nadia Higgins (Author).
From the "Nose Stylus" (so you can use your smartphone in the bathtub) to the "Brush and Shine" (for the grooming of bald-headed men) to "Anti-Theft Lunch Bags" (which make sandwiches appear to be moldy and unpalatable), this book is filled with truly odd and intriguing inventions.

Fiction

- Fires of Invention (Mysteries of Cove), 2015 by J. Scott Savage (Author).
Trenton Colman is a creative thirteen-year-old boy with a knack for all things mechanical. But his talents are viewed with suspicion in Cove, a steam-powered city built inside a mountain. In Cove, creativity is a crime and invention is a curse word.
- Frindle, 1998 by Andrew Clements (Author), Brian Selznick (Illustrator).
A quirky, imaginative tale about creative thought and the power of words that will have readers inventing their own words.
- Ghostbusters: Ectomobile, 2017 by Troy Benjamin (Author), Marc Sumerak (Author), Ian Moores (Illustrator).
Discover the secrets of the Ghostbusters' iconic specter-smashing automobile, Ecto-1, with this comprehensive owner's workshop manual. Along with a detailed breakdown of Ecto-1's capabilities and exclusive cutaway images that show the car's souped-up engine and onboard ghost-tracking equipment, the book also focuses on the Ghostbusters' portable tools of the trade, including proton packs, ghost traps, and PKE meters.
- The Invention of Hugo Cabret, 2007 by Brian Selznick (Author).
Orphan, clock keeper, and thief, Hugo lives in the walls of a busy Paris train station, where his survival depends on secrets and anonymity. But when his world suddenly interlocks with an eccentric, bookish girl and a bitter old man who runs a toy booth in the station, Hugo's undercover life, and his most precious secret, are put in jeopardy. A cryptic drawing, a treasured

notebook, a stolen key, a mechanical man, and a hidden message from Hugo's dead father form the backbone of this intricate, tender, and spellbinding mystery.

- Rebel Genius (Rebel Geniuses Book 1), 2016 by Michael Dante DiMartino (Author). Creative fantasy blends art, mysticism, math, and magic. In twelve-year-old Giacomo's world, art is powerful, dangerous, and outlawed. A few artists possess Geniuses, birdlike creatures that are the living embodiment of an artist's creative spirit. Those caught with one face a punishment akin to death.
- Surviving the Applewhites , 2012 by Stephanie S. Tolan (Author). Jake is notorious. Rumor has it he managed to get kicked out of every school in Rhode Island, and actually burned the last one down to the ground. Only one place will take him now, and that's a home school run by the Applewhites, a chaotic and hilarious family of artists: poet Lucille, theater director Randolph, dancer Cordelia, and dreamy Destiny.

Magazines, Journals, Miscellaneous

- Artsonia Kids Online Art Museum: Empowers students to display, and explain, their own creations. (Download from your app store)
- Ask Magazine: Explores the world with inventors, artists, thinkers, and scientists of the past and present.
<https://shop.cricketmedia.com/magazines-6-9-years/ASK-Magazine-for-Kids.html>
- Pixlr - Photo Collages, Effects: Easy photo-editing tool sparks creativity, teaches basic art techniques. Download from your app store

Online Links

- Exploritorium: Activities from the San Francisco Museum
<https://www.exploritorium.edu/explore/activities>
- Math Science Music: Thoughtful tools teach STEM skills through music and creativity
<https://mathsciencemusic.org/>
- The Metropolitan Museum of Art, #metkids: Made for, with, and by kids, this site offers exploration and artistic fun.
<https://www.metmuseum.org/art/online-features/metkids/>
- Tinkercad: Amazingly simple yet powerful online CAD tool turns kids into makers.
<https://www.tinkercad.com/#>

Background information for the Educator

- Creative Educator: Integrate Technology into the Curriculum
<https://creativeeducator.tech4learning.com/lessons/>
- Teaching Creative Thinking: Developing Learners Who Generate Ideas And Can Think Critically (Pedagogy for a Changing World), 2017 by Bill Lucas (Author), Ellen Spencer (Author).
Successful students value knowledge and skills at the same time as understanding the importance of developing their capabilities as learners in every lesson they experience. Teaching Creative Thinking is action-oriented and research-led and is packed with examples and case studies of successful practice, and pitfalls to avoid.