

Math, Science, and Engineering Resources for Girls

This list includes books that should prove fun and interesting for girls participating in Operation SMART activities. Some of these titles are biographies of prominent, inspirational women in math and science fields. Many of the books provide information and activities in a girl-friendly manner. While no one would be expected to own all these titles, this list will provide a useful starting point in building your collection. These books can be purchased online or in bookstores, and many of them should be available to borrow from your local public library.

Albee, Sarah. (1998). *The dragon's scales*. New York: Random House. ISBN: 0679983813. \$11.99

A Step 2 Book, which is a part of the Step into Reading® +Math series for the youngest girls, or girls for whom English is a second language. A mean dragon has just moved to Berry Town. It's going to take a clever girl, a teacher, and a set of scales to get rid of him! Staff could also use this as a resource for Economic Literacy to compare the monetary value of many coins of small denomination to a single coin of greater denomination.

Becklake, Sue. (2003). *100 things you should know about space*. Broomall, PA: Mason Crest. ISBN: 1590844572. \$18.95

A hundred facts about astronomy are surrounded by beautiful illustrations. This book includes more text and fewer pictures than *Picture Reference: Space* by Becklake, but the vocabulary in *100 things* is a bit simpler. The facts are grouped by topic, and it includes a table of contents and an index.

Becklake, Sue. (2000). *Picture Reference: Space*. Princeton, NJ: Two-Can. ISBN: 1587286602. \$13.95

Stunning full-color illustrations with labels and accompanying text pack a lot of information into 48 pages. This is a great introduction to astronomy for girls. Although the text includes vocabulary that might be difficult, especially for girls under 10, the drawings and photos are interesting and informative even without the text. It includes a table of contents, a glossary, and an index.

Bredeson, Carmen. (1998). *Shannon Lucid: Space Ambassador*. Brookfield, CT: Millbrook Press. ISBN: 0761304061. \$7.95

This clearly-written biography with many color photographs profiles the life of the American woman astronaut who spent the longest time of anyone in the space program on a mission (nearly six months) while conducting experiments aboard the Russian space station, Mir. Large print and lots of white space make these 48 pages easy to read.

Butts, Ellen R., & Schwartz, Joyce R. (2000). *Eugenie Clark: Adventures of a shark scientist*. North Haven, CT: Linnet Books. ISBN: 0208024409. \$18.50

This is a biography of the life and career of an ichthyologist (a person who studies fish). She became interested in fish as a young girl when she visited the New York Aquarium. Dr. Clark, who earned her Ph.D. in zoology (the study of animals), became an accomplished diver, won a Fulbright award to study sharks, and was a faculty member at the University of Maryland. She has recently retired and at the age of 78 is now leading research expeditions to the South Pacific. Her own book for children is called *The Desert Beneath the Sea*.

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Resources for Science, Math, and Engineering for Girls (2)

Cobb, Vicki, & Darling, Kathy. (1999). *You gotta try this! Absolutely irresistible science*. New York: Morrow Junior Books. ISBN: 0688157408. \$15.00

The title of this useful resource gives the reader the impression that the authors are trying too hard to make this book one that kids can't wait to open. Ignore the hype and use this source for 50 hands-on science activities using, for the most part, readily available materials. The veteran authors have published other best-selling science books for children, including *Don't Try this at Home!* Use your own judgment, as always. For example, you could get an angry cat if you rub a balloon on her fur, as recommended on page 22. The activities will interest even those who say they don't like science.

Cooney, Miriam P. (Ed.). (1996). *Celebrating women in mathematics and science*. Reston, VA: National Council of Teachers of Mathematics. ISBN: 08773534255. \$24.50

This collection of biographical essays informs the reader about the lives of women who achieved important goals in the fields of math and science. Personal history is included and shows how women such as Grace Hopper, Ada Lovelace, and Barbara McClintock struggled to overcome barriers to pursue their careers. Handsomely illustrated by scratchboard art that resembles woodcuts, the book is very well-written by a group of girls and young women from middle and high schools in Indiana.

Dixon, Andy, & Harris, Nick (Ill.). (2001). *Bug world: An action-packed fantasy adventure set in a world of gigantic bugs*. London: Big Fish. ISBN: 0806983310. \$14.95

Join the Bug World team of experts in saving your theme park from sabotage by the rival park WaspWars. In each dome of the park, you will be given interesting information about its inhabitants and a description of the obstacles you're facing. Your job is to count the insects and arachnids and determine the best methods to save your park. The author and illustrator present lots of information in a fun format that incorporates picture-searching with reading and problem-solving.

Hacker, Carlotta. (1998). *Scientists*. New York: Crabtree. ISBN: 0778700283. \$8.95

Part of the publisher's "Women in Profile" series. Other titles include explorers, musicians, Nobel Prize winners, political leaders, and writers. Color photographs illustrate short biographies of Jocelyn Bell Burnell, Rachel Carson, Dian Fossey, Mary Leakey, Margaret Mead, and Chien-Shiung Wu. This selection of women scientists from many cultures is supplemented by short one-paragraph biographies of 14 additional achievers. A glossary is included.

Hopkins, Lee Bennett. (1999). *Spectacular science: A book of poems*. New York: Simon & Schuster. ISBN: 0689812833. \$17.00

Yes, this is a book of poems about science in a large, colorful format with imaginative illustrations by Virginia Halstead. This is a nice addition to the activity books and other resources on your "SMART" bookshelf. Don't forget to include this resource when you are doing poetry programming.

Murphy, Stuart J. (1997). *The best vacation ever*. New York: HarperCollins. ISBN: 0064467066. \$4.95

This is a Level 2 MathStart™ paperback that introduces basic math skills, such as adding and subtracting, reading timelines, estimating, and using fractions. Written for age 6 and up. The central character is a girl who uses data-collecting and problem-solving skills to determine where the family should go on vacation, with a surprising result.



Resources for Science, Math, and Engineering for Girls (3)

Naden, C. J., & Blue, R. (1991). *Christa McAuliffe: Teacher in space*. Brookfield, CT: Millbrook Press. ISBN: 1878841580. \$8.95

This is an easy-to-read biography of the first private citizen chosen to go on a space flight, which tragically resulted in an explosion moments after takeoff. Six other astronauts were also killed aboard the Challenger on January 28, 1986. This book provides interesting facts about the life of this teacher and mother who was selected from a group of ten finalists to qualify for the opportunity to fly with the crew.

O'Brien-Palmer, Michelle. (2002). *How the Earth works: 60 fun activities for exploring volcanoes, fossils, earthquakes, and more*. Chicago: Chicago Review Press. ISBN: 1556524420. \$14.95

Through games, activities, models, and experiments, students with many different learning styles will have fun exploring many facets of Earth. This book includes a useful "Chapter-by-Chapter Content and Skills Guide", and the activities reach across the school curriculum.

Rocklin, Joanne. (1996). *The case of the missing birthday party*. New York: Scholastic. ISBN: 0590673599. \$3.99

Liz the Whiz & Co. help a neighbor find her way to a birthday party by using their knowledge of place value. This is one of the easy-to-read books in the Hello Math Reader series that is designed to match the reading and math skills of children in early elementary school. The books are clearly marked by levels, grades and ages. This particular story is Level 4, grades 2 and 3. The purpose of the stories in the series is to teach math skills in an entertaining way so that the girls will enjoy real world math.

Romero, M. (1997). *Ellen Ochoa: The first Hispanic woman astronaut*. New York: Rosen. ISBN: 0823950875. \$12.95

The reading level for this slim biography with color photographs is third grade, making it a good choice for girls who are beginning readers and those for whom English is a second language.

Wyatt, Valerie. (2000). *The math book for girls and other beings who count*. Toronto: Kids Can Press. ISBN: 1550745840. \$9.95

Through a conversational language style and entertaining drawings, girls can find out how math is part of everyday life. Activities include measuring a yard using a bike, building a geodesic dome out of newspaper, and using a recipe for a tiny cake to make a larger one. Through these activities, girls will have fun, and learn, by figuring things out for themselves.

Wyatt, Valerie. (1997). *The science book for girls and other intelligent beings*. Toronto: Kids Can Press. ISBN: 1550741136. \$8.95

A good source of activities using easy-to-find and inexpensive materials. Colorful drawings accompany ideas to make science fun, such as swallowing a banana while you are standing on your head (does it still get to your stomach?), measuring the size of your friends' left feet to determine their height (it works), and how footprints get preserved in rock (an activity to connect to Girls Dig ItSM).

