

## How Things Work Resource Guide

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[Periodical Indexes and Full-text Databases](#)

[Selected Websites](#)

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This guide is meant to suggest useful websites and print and electronic resources for finding information on the basics of technology, including everyday items, physics, and inventions for both the expert and non-expert. See also the **Physics Resource Guide** and **General Science Selected Websites**.

### **Periodical Indexes and Full-text Databases**

The Sawyer Library subscription periodical indexes and full-text resources are available to current Suffolk University students, faculty, and staff.

#### [Academic Search Complete](#)

This is the major interdisciplinary EBSCO database covering nearly every academic field, including science and technology. Indexes and abstracts over 8,000 popular and scholarly journals with full-text access to over 4,700 publications. Can be useful for information on new products.

#### [Science Reference Center](#)

"Science Reference Center is a comprehensive research database that provides access to a multitude of full text science-oriented content. This database contains full text for nearly 640 science encyclopedias, reference books, periodicals," etc. Covers topics such as history of science, science and society, science as inquiry, scientists, and technology.

#### [Academic OneFile](#)

Thomson Gale's Academic OneFile (Infotrac) is a major multi-disciplinary database which

indexes and abstracts over 8,000 journals, with full-text available for about two-thirds of the titles. Includes articles on technology, physical sciences, medicine, and inventions from both scholarly journals and popular magazines.

### [AccessScience](#)

This is the online version of the *McGraw-Hill Encyclopedia of Science & Technology*. Search alphabetically, by keyword or phrase, or browse by topic. Categories include agriculture, general science & technology, navigation, and physics. Articles may cover manufacturing processes and "operating principles" for products and many contain images, including animated videos. There is a "question and answer" section where readers can ask the editors about topics such as "how does a radio telescope work?"

### [Selected Websites](#)

#### [HowStuffWorks](#)

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

This handy and attractive site founded by Marshall Brain is the companion website to his "How Stuff Works" books. The opening screen features objects or processes currently in the news. Categories include electronics, health, and home & garden, and many articles include videos. However, be aware of the many pop-up ads and links to other commercial sites.

#### [How Everyday Things Are Made](#)

<http://manufacturing.stanford.edu/>

The Alliance for Innovative Manufacturing at Stanford University and Design4X (an online engineering education company) present this streaming video website that provides narrated explanations of the creation of products like chocolate, plastic bottles, denim, and airplanes. "It covers over 40 different products and manufacturing processes, and includes almost 4 hours of manufacturing video. It is targeted towards non-engineers and engineers alike."

#### [The Why Files](#)

<http://whyfiles.org/>

This site, based at the University of Wisconsin-Madison, calls itself the "Science Behind the News" that "illuminate[s] ... science, math and technology behind the headlines." Archives can be browsed by subjects or themes, from "Arts & Humanities" to "Weather & Climate," or the search engine can be used to find topics by keywords. Covers a wide variety of subjects from snowflakes and diamonds to hybrid cars and skin cancer.

#### [Best Inventions of the Year](#)

[http://www.time.com/time/specials/2007/article/0,28804,1677329\\_1678542,00.html/](http://www.time.com/time/specials/2007/article/0,28804,1677329_1678542,00.html/)

If you're interested in the latest breakthroughs, *Time Magazine* does an annual survey of what they think are the "best inventions of the year" in areas like "Cars & Buses," "Robots," "Health," and "Computers." Also called "Coolest Inventions," "Best Inventions," "Inventions of the Year."

## **Selected Print and Electronic Resources**

### [Scientific American Inventions and Discoveries](#)

February 2006

This ebook encyclopedia by Rodney Carlisle covers "all the milestones in ingenuity--from the discovery of fire to the invention of the microwave oven." Organized chronologically into six historical periods from the ancient world to the 21st century, it has an extensive general A-Z index for access to over 400 inventions and discoveries.

### [Scientific American: How Things Work Today](#)

REF T47 .S43 2000

This book, based on *Scientific American's* "Working Knowledge" column, "shows you how the world around you works, with three-dimensional illustrations, diagrams, and exploded views as well as up-to-the-minute color photographs."

### [How Electronic Things Work--and What to Do When They Don't](#) 2nd ed.

February 2007

This title by Robert L. Goodman deals with "household electronics," e.g., CD players, answering machines, cordless phones - how they work and how to maintain and repair them.

### [How Products are Made](#)

Gale Cengage Learning 1994 -

This is a well-illustrated, multi-volume series that "answers the question "How do they make that?" Besides explaining how household items, machinery, and electronics are manufactured, it also covers how things work, the history and "future" of products, and provides biographies of their inventors. Volumes 1 and 2 are also available in Sawyer Library: REF TS146 .H67.

### [Science of Everyday Things](#) 4 vols.

Gale Cengage Learning 2002

This title in the Science section of the Gale Virtual Reference Library consists of four volumes: Real-Life Chemistry, Real-Life Physics, Real-Life Biology, and Real-Life Earth Science, which present "theories in their everyday applications for further understanding." The scientific basis for how items such as radios, wrenches, and even seesaws work is explained through illustrations and background history.

### [Encyclopedia Britannica Online](#)

Encyclopedia Britannica

This basic encyclopedia can be useful for finding out how things work for specific products, inventions, inventors, etc. Can be searched A-Z, browsed by subject, or by topics in its index. Includes lengthy essays with history, illustrations, and links to related articles.

### [The New Illustrated Science and Invention Encyclopedia: The new how it works](#) Rev. ed.

REF Q126 .N49 1993

This 28 volume encyclopedia covers science, the physical world, mechanics, and engineering, etc., from the more technical, e.g., acoustics, to the everyday, e.g., tennis balls. Topics can be searched A-Z, through a "Thematic Index," or its general alphabetical index. "Extensively illustrated" with many colorful photos, diagrams, and drawings.

### [G.K.Hall Encyclopedia of Modern Technology](#)

REF T47 .G18 1987

Although somewhat outdated, this colorfully illustrated encyclopedia gives basic background history and "how it works" information for inventions in "Measuring," "Seeing," "Powering," "Moving," e.g., telescopes, the space shuttle, and solar houses.

### [Gadgets and Necessities](#)

REF TX298 .W43 2000

An "encyclopedia of household innovations" of the twentieth century that changed the way we live. Includes information on the history, inventors, and manufacturers of appliances including stoves, vacuum cleaners, and refrigerators.

### [Inventions and Inventors](#) 2 vols.

REF T20 .I59 2002

This A-Z encyclopedia focuses on 20th century inventions covering such diverse fields as consumer products, medicine, music, transportation, and computers. Includes biographies of the "people behind the inventions." There is also a time line of inventions from 1900-2000, a list of "Topics by Category," and a general index.

### [The New Way Things Work](#) Rev.ed.

REF T47 .M18 1998

In this newer edition of his classic work, David Macaulay, who has written and illustrated several popular books, offers his own colorful and whimsical drawings featuring "woolly mammoths." This book groups things by "scientific principles," e.g., "mechanics of movements." Topics include lasers, windmills, and websites. There is also a website, [The New Way Things Work](#), sponsored by his publisher, Houghton Mifflin, where you will find several examples of his explanations with "interactive areas."

### [The New How Things Work](#) Rev. ed.

REF T47 .L2923 2004

Published by the National Geographic Society, this title by John Langone explains "everyday technology" from "lawn mowers to surgical robots and everything in between." It is well-illustrated with many photographs, drawings, and diagrams.

### [How Things Work: the physics of everyday life](#) 3rd ed.

REF QC21.2 .B59 2006

This is the latest edition of the book by physics professor Louis A. Bloomfield, University of

Virginia, that explains basic physics concepts and how they relate to "everyday objects" such as bicycles, microwave ovens, and lightbulbs. There are also two websites that supplement this book:

### [How Things Work](#)

<http://bcs.wiley.com/he-bcs/Books?action=index&bcsId=2880&itemId=047146886X>

The academic publisher Wiley provides this "Student Companion Site" to Bloomfield's book. You can browse through chapters and other resources, e.g., cases, "additional web chapters," or the author's website.

### [How Things Work](#)

<http://howthingswork.virginia.edu/>

This website provides information on "Explaining the physics of everyday life" through questions submitted by readers and answered by Bloomfield. It is searchable by keyword, topic, or date (the year when questions were submitted).