

RESOURCES

Student Books:

Asimov, Isaac; *How Do We Find Out About Atoms?* Walker, NY, 1976.

Asimov, Isaac; *Inside the Atom*, Abbelard Schuman, 1976.

Berger, Melvin; *Atoms, Molecules, and Quarks*, Putnam, NY, 1986.

Bronowski, J. and Millicent E. Selsam; *Biography of an Atom*, Harper & Row, NY, 1965.

Chester, Michael; *Particles: An Introduction to Particle Physics*, McMillan, NY, 1978.

Cronin, James W.; *What Does a High Energy Physicist Really Do?* The 1990 Ryerson Lecture, the University of Chicago, 1990.

Gallant, Roy; *Explorers of the Atom*, Doubleday, NY, 1974.

Harber, Heinz; *Our Friend the Atom*, Simon and Schuster, NY, 1956 (Disney).

Hobart, Ellis; *Knowing the Atomic Nucleus*, Lothrop, Lee, and Shepard, NY, 1973.

Lampton, Christopher F.; *Particle Physics: The New View of the Universe*, Enslow Publ., Hillsdale, NJ, 1991.

Lampton, Christopher F.; *Superconductors*, Enslow Publ., Hillsdale, NJ, 1989.

Larsen, Egon; *Atoms and Atomic Energy*, Golden Press, NY.

Leeds, Rosalind; *Introducing the Atom*, Harper and Row, NY, 1967.

Teacher Resources: Books:

Carrigan, Jr., Richard A. and W. Peter Trower, *Particles and Forces at the Heart of the Matter*, W.H. Freeman and Company, NY, 1990.

Pagels, Heinz, *Perfect Symmetry*, Simon and Schuster, 1985.

Hawking, Stephen, *A Brief History of Time*, Bantam Books, 1988.

Glashow, Sheldon, *Interactions*, Warner Books, 1988.

Lederman, Leon M. with Dick Teresi, *The God Particle*. Houghton Mifflin, NY, 1993.

Lederman, Leon M. and David N. Schramm, *From Quarks to the Cosmos: Tools of Discovery*. Scientific American Library, NY, 1989.

Quinn, Helen R., et.al., *The Discovery of Subatomic Particles*. W.H. Freeman and Company, NY, 1990.

Weinberg, Steven, *The Discovery of Subatomic Particles*. W.H. Freeman and Company, NY, 1990.

Teacher Resources: Articles:

“A Tale of Two Labs,” *The Economist*, September 10, 1988, v. 308, p.101.

Baslough, John, Kevin Fleming and David Jeffrey, “Worlds within the Atom,” *National Geographic*, May 1985, v. 167, no. 5, pp. 634-663.

Begley, Sharon, “The Biggest Machine Ever,” *Newsweek*, April 22, 1985, v. 105. p.56, Ill.

Bronson, Gail, “Dancing on the Head of a Pin,” *Forbes*, April 6, 1987, v. 139, p. 152.

Browne, Malcomb, “Atom-Smashing Now and in the Future: A New Era Begins,” *New York Times*, February 3, 1987, v. 136, p. 15, Ill.

Cool, Norman, “A Crystal Clear View of the Nucleus,” *New Scientist*, March 31, 1988, v. 117,p. 44, Ill

Fisher, Arthur, “Seeing Atoms,” *Popular Science*, April 1989, v. 234, pp. 102-107, Ill.

Hill, Chris, “Guage Bosons: “The Ties That Bind,” *The Science Teacher*, October 1982.

Hill, Chris, “Quarks and Leptons: It’s Elementary,” *The Science Teacher*, September 1982.

Jones, Glyn, “The Phantom of the Atom,” *New Scientist*, January 28, 1988, v. 117, p. 56, Ill.

Klose, Kevin, “Old Prairie, New Frontier.” *Washington Post*, March 16, 1985, v. 108, p. A3, col. 4.

Lederman, Leon (interview) *Omni*, pp. 100-110, 158.

Quigg, Chris, “Elementary Particles and Forces,” *Scientific American*, April 1985, v. 252, no. 4, p. 84-95.

Sullivan, Walter, “In Search of the Elusive Atom,” *Modern Maturity*, v.28, August/September 1985, p. 56, Ill.

Wilson, Robert R., “Particle Accelerators,” *Scientific American*, March 1978, v. 198, no. 3, pp. 64-76.

Wilson, Robert R., “The Batavia Accelerator,” *Scientific American*, February 1974, v. 230, no. 2, pp. 72-83.

Teacher Resources: Audio-Visual:

The following pricing and availability information is current as of October 1993.

The Atom, VHS, 36 minutes, color, 1992.

On-location searches for the secrets of the atom. Part 1: “How we found out about atoms” and Part 2: “What is an atom” take the viewer to places such as the Cavendish Laboratory, Fermilab, IBM and Oak Ridge Laboratories as well as others. Available through Hawkhill, Madison, WI (\$129.00) and includes a *Powerbook* for students.

The Atom - Future Quest, VHS, 27 minutes, color, 1992.

Physicists from the world’s premier center for atomic research, Fermilab, discuss the future of atomic studies. Includes discussion of basic questions in cosmology as well as spin-offs from superconductivity, supercomputers and more. Available through Hawkhill, Madison, WI (\$69.00) and includes a *Powerbook*.

Creation of the Universe, VHS, 90 minutes, color, 1986.

Explains our ideas about the origin and evolution of the universe in everyday terms with interviews with Stephen Hawking and Allan Sandage, among others. Available through Friends of Fermilab at a cost of \$15.00 which includes a teacher and student guidebook. Videodisc is available through the Astronomical Society of the Pacific (\$49.95).

Particle Detectives, VHS, 26 minutes, color, 1987.

Explanation and tour of Fermilab with two physicists interacting with three junior high school students. Contents are divided into five 3- to 5-minute segments covering accelerators, the Rutherford Experiment and detectors as well as other concepts. Available through Friends of Fermilab at a cost of \$10.00.

Powers of Ten, VHS, 21 minutes, color, 1978.

A classic. A narrated journey into space where every step propels you ten times farther outward. After reaching clusters of galaxies, you return to Earth and travel into the microscopic realm until you reach the nucleus of an atom. Available locally with a \$10.00 deposit on loan from the Lederman Science Center. May be purchased from the Astronomical Society of the Pacific in video (\$39.95) or Videodiscover, Inc., Seattle WA videodisc (\$99.00). This video may also be available for borrowing through AVID or your local library system. University of Illinois Film and Video Center rents this video for \$17.00.