

Science Books Recommendations for Ancillary Readings Compiled by James D. Nickel

Introductory comments:

On several occasions, I have been asked by friends, teachers, and parents to provide a list of readings in science. Over the past 30 or so years, I have read much in science because my research in mathematics required it. This list is only a selected list, a list made with high school students (and high school teachers) in mind. It is a general potpourri of titles written by authors from wide spectrums of presuppositional starting points (from evolutionary to Biblical Christian). This list is not categorized but it covers all of the basic subjects of high school science (with an emphasis on physics and its mathematical revelations). For me personally, I consider it a shame for a student of science to receive his or her instruction only from a textbook. Ancillary readings in science are a must if one wants to experience the enrichment that science (and its history) brings to the table. Hence, you will find in this list interesting and fascinating histories (of salt, of the pendulum, of the screw, of the compass, of the Raytheon Corporation, of the Difference Engine, etc.). Like a good mystery story, these histories are written to both inform and entertain. As students, you have the gift of time to explore these readings, to be enriched by them, and to become leaders in your world by the knowledge obtained thereby. Remember, read to be informed so that you can lead. In the battle of ideas (II Corinthians 10:5), we are commanded to take every thought captive unto the obedience of Christ. I pray that these readings be a springboard to such God-honoring imprisonment.

- Wiker, Benjamin D. *The Mystery of the Periodic Table?* (Ignatius Press, 2003): Designed for ages 12-13.
- Atkins, P. W. *Periodic Kingdom: A Journey into the Land of the Chemical Elements* (Basic Books, 1995): High school level and above.
- Asimov, Isaac. *Building Blocks of the Universe* (Abelard-Schuman: 1974): Junior high and above.
- Crosby, Alfred W. *The Measure of Reality: Quantification and Western Society, 1250-1600* (Cambridge University Press, 1997): High school and above.
- Bernal, J. D. *A History of Classical Physics: From Antiquity to the Quantum* (Barnes and Noble, 1972): High school and above.
- Asimov, Isaac. *Understanding Physics* (Dorset Press, 1966): High school and above.
- Asimov, Isaac. *Asimov's New Guide to Science* (Basic Books, 1984): High school and above.
- Schaaf, Fred. *40 Nights to Knowing the Sky* (Henry Holt, 1998): High school and above.
- Martin, Martha Evans and Donald Howard Menzel, *The Friendly Stars: How to Locate and Identify Them* (Dover, 1966): Junior high and above.
- Crease, Robert P. *The Prism and the Pendulum: The Ten Most Beautiful Experiments in Science* (Random House, 2003): High school and above.
- Byl, John. *God and Cosmos: A Christian View of Time, Space, and the Universe* (The Banner of Truth Trust, 2001): High school and above (*a must read for its analysis of presuppositions*).

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- Byl, John. *The Divine Challenge: On Matter, Mind, Math & Meaning* (The Banner of Truth Trust, 2004): High school and above (including teachers).
- Morris, Tim and Don Petcher. *Science & Grace: God's Reign in the Natural Sciences* (Crossway, 2007): upper level high school and all teachers of science.
- Sobel, Dava. *Longitude: The True Story of a Lone Genius Who Solved the Greatest Scientific Problem of His Time* (Walker and Company, 1995): High school and above.
- Wolters, Albert M. *Creation Regained: Biblical Basis for a Reformational Worldview* (Eerdmans, 1985): An important world view statement, upper level high school and teachers of science should master this short work.
- Bahnsen, Greg L. *Is Evolution Scientific? Can Theistic Evolution Save the Theory?* (Covenant Media Foundation - recording): High school and above.
- Darwin, Charles. *The Origin of the Species* (many versions). High school and above.
- Wells, Jonathan. *Icons of Evolution: Science or Myth?* (Regnery, 2000): High school and above.
- Gilson, Etienne. *The Unity of the Philosophical Experience: The Medieval Experiment, The Cartesian Experiment, the Modern Experiment* (Ignatius Press, 1964): upper level high school and teachers of science.
- Gies, Frances and Joseph. *Cathedral, Forge, and Waterwheel: Technology and Invention in the Middle Ages* (Harper Collins, 1994): High school and above
- Gimpel, Jean. *The Medieval Machine: The Industrial Revolution of the Middle Ages* (Penguin, 1976): High school and above.
- Epstein, Lewis Carrol. *Thinking Physics: Understanding Practical Reality* (Insight Press, 2005): High school and above (consists of short, one page summaries of basic physical principles).
- Vergara, William C. *Science, the Never-Ending Quest* (Harper & Row, 1965): Junior high and above. This book is out of print but worth trying to locate because it is an excellent historical survey.
- Rothman, Tony. *Instant Physics: From Aristotle to Einstein, and Beyond* (Byron Preiss, 1995): High school and above.
- Raymo, Chet. *The Path: A One-Mile Walk Through the Universe* (Walker and Company, 2003): High school and above (a fascinating analysis of how a scientist observes and thinks).
- Swade, Doron. *The Difference Engine: Charles Babbage and the Quest to Build the First Computer* (Viking, 2000): High school and above.
- Garfield, Simon. *Mauve: How One Man Invented a Color that Changed the World* (W. W. Norton, 2001): High school and above.
- Rybczynski, Witold. *One Good Turn: A Natural History of the Screwdriver and the Screw* (Scribner, 2000): High school and above.
- Aczel, Amir D. *The Riddle of the Compass: The Invention that Changed the World* (Harcourt, 2001): High school and above.
- Kurlansky, Mark. *Salt: A World History* (Penguin, 2002): High school and above.
- Scott, Otto. *The Creative Ordeal: The Story of Raytheon* (Atheneum, 1974): High school and above.
- Sinclair, Jim. *How Radio Signals Work* (McGraw-Hill, 1997): High school and above.

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- Wise, Kurt P. *Faith, Form, and Time: What the Bible Teaches and Science Confirms about Creation and the Age of the Universe* (Broadman & Holman, 2002): High school and above.
- Snoke, David W. *Natural Philosophy: A Survey of Physics and Western Thought* (Access Research Network, 2003): High school and above (including teachers), originally given as a set of lectures to high school homeschoolers and it encourages philosophical analysis along with mastery of mathematical skills (also comes with a solutions guide).
- Griffith, W. Thomas. *The Physics of Everyday Phenomena: A Conceptual Introduction to Physics* (McGraw Hill, 2001): High school and above (a focus on concepts, not mathematics).
- Wolfson, Richard and Jay M. Pasachoff, *Physics for Scientists and Engineers* (Addison-Wesley, 1999): upper high school and above (if you want to understand physics from both concepts and mathematics, including calculus, then this text will ably meet these requirements).
- Caspar, Max. *Kepler* (Dover, 1993): High school and above.

Read, if you can, the original works by Copernicus, Galileo, Kepler, and Newton.

- Galileo Galilei, *Discoveries and Opinions of Galileo* (Doubleday, 1957).
- Galileo Galilei, *Dialogues Concerning Two New Sciences* (Dover, 1954).
- Galileo Galilei, *Dialogue Concerning the Two Chief World Systems* (The Modern Library, 2001).
- Johannes Kepler, *Epitome of Copernican Astronomy & Harmonies of the World* (Prometheus, 1995).
- Nicolaus Copernicus, *On the Revolutions of Heavenly Spheres* (Prometheus, 1995).
- Isaac Newton, *The Principia* (Prometheus, 1995).
- Isaac Newton, *Opticks* (Dover, 1979).