This is an annotated bibliography of science and mathematics textbooks and juvenile trade books received in the Educational Materials Center between January, 1969 and February, 1970. The contents are divided into two major sections: Juvenile Literature, and Textbooks for Elementary and Secondary Schools. The first section includes only those books which have been favorably reviewed in at least two major professional journals or representative selective bibliographies. Areas covered are: History and Science; General Science; The Environment; Biology of Animals, Plant Life, and Health; The Earth and Space; Mathematics; Science Fiction; and Picture Books and Easy Reading. All textbooks received in the Center are included in the second section, and are listed by curriculum area: Mathematics; General Science; Biology; Chemistry; Earth Science; and Physics. Auxiliary texts are listed under Mathematics and Science. (EB)
SCIENCE AND MATHEMATICS BOOKS FOR ELEMENTARY AND SECONDARY SCHOOLS

A Bibliography Based on the Acquisitions of the Educational Materials Center
February 1970
U.S. Office of Education
National Center for Educational Communication
SCIENCE AND MATHEMATICS BOOKS FOR ELEMENTARY AND SECONDARY SCHOOLS

A Bibliography from the Educational Materials Center

Compiled by: Lois B. Watt, Chief, and
Delia Goetz, Consultant
Educational Materials Center

and

Eunice von Ende, Bibliographer
Biological Sciences Communication
Project
George Washington University

U. S. Department of Health, Education, and Welfare
Office of Education

Robert H. Finch, Secretary
James E. Allen, Jr., Assistant Secretary and Commissioner of Education

James J. Gallagher, Deputy Assistant Secretary and Deputy Commissioner for Planning, Research, and Evaluation

National Center for Educational Communication
This report concerns the science and mathematics textbooks and juvenile trade books received in the Educational Materials Center between January 1969 and February 1970. It has been prepared as a means of answering questions from educators about the nature and availability of new books of possible use in science and mathematics education programs in elementary and secondary schools in the United States. Inclusion of titles herein does not represent endorsement of them by the Office of Education.

The Center distributes only its own publications. Readers wishing to obtain materials listed here should do so through the usual commercial channels or from the publishers directly. For information about how to obtain other reports prepared in this Center, please refer to the inside back cover of this bulletin.

Section II of this list, "Textbooks for Elementary and Secondary Schools," was compiled by Eunice von Enée, Bibliographer, Biological Sciences Communication Project of the George Washington University, Washington, D.C., under contract OEC-3-8-080344-0037.
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### II. TEXTBOOKS FOR ELEMENTARY AND SECONDARY SCHOOLS

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I. JUVENILE LITERATURE

The compilers of this section have included only those science and mathematics books for children and young people which have been favorably reviewed in at least two of the major professional journals, or representative selective bibliographies reporting on such books.

The reviewing media and selection tools used in this sorting process in the Educational Materials Center are:

Appraisal, published by the Children's Science Book Review Committee, a non-profit organization sponsored by the Harvard Graduate School of Education, Cambridge, Mass., and the New England Round Table of Children's Librarians; three times a year.


Bulletin of the Center for Children's Books, published by the University of Chicago Press; monthly except August.


Kirkus Reviews, published by the Kirkus Service, New York; semimonthly.


HISTORICAL AND SCIENCE


Baylor, Byrd. Before You Came This Way. Illus. by Tom Bahti. New York: Dutton, 1969. Unpaged. This gently poetic text introduces the ancient Indians of the Southwest, with interpretations of the early cave paintings provided by an artist who is also an anthropologist. (Grades 1–4)

Branley, Franklyn M. The Mystery of Stonehenge. Illus. by Victor G. Ambrus. New York: Crowell, 1969. 51 pp. Summarizes the theories about the hows and whys of these massive pillars, acknowledging that the mystery may remain just that; many drawings and diagrams. (Grades 4–8)

Buehr, Waiter. Salt, Sugar, and Spice. Illus. by author. New York: Morrow, 1969. 80 pp. Interesting anecdotes of history are included in the discussion of the ways in which salt and sugar are obtained, how spices in general stimulated trade and the development of nations, together with a list of spices, their characteristics and uses. (Grades 3–6)

Chase, Sara Hannum. The First Book of Silver. Illus. with photographs. New York: Watts, 1969. 87 pp. Tells of the discovery of silver, its artistic as well as practical uses, modern methods of mining, the increasing use of silver in industry, and the care of silver. Illustrations show objects made by skilled craftsmen. (Grade 4–up)


Helfman, Elizabeth S. *Celebrating Nature: Rites and Ceremonies Around the World*. Illus. by Carolyn Cather. New York: Seabury Press, 1969. 165 pp. Useful information often difficult to obtain about how peoples of earliest times celebrated changes in the seasons; describes modern holidays and festivals related to them, with details of costumes worn and dances performed. (Grade 4—up)


May, Julian. *Before the Indians*. Illus. by Symeon Shimin. New York: Holiday House, 1969. Unpaged. A brief, simply written account of the culture of people who lived long before the American Indians, interesting facts on how archaeologists obtained this information, and illustrations with details to supplement the text. (Grades 3—5)


**GENERAL SCIENCE**


Halacy, Daniel S., Jr. *Experiments With Solar Energy*. Illus. with photographs and line drawings. New York: Norton, 1969. 147 pp. Directions and diagrams for making solar cookers, a solar-powered radio, a water heater, a model airplane that flies on sunshine, and other projects—an arresting documentation of how the sun’s energy can be captured and put to work. (Grades 6—9)

of animation; uses such normally obtainable materials as shoebox, paper strips, pocket comb, and string. (Grades 3–5)


Science Inquiry Project Series. Illus. by Peter P. Plasencia. Englewood Cliffs, N.J.: Prentice-Hall, 1969. The following four books have a common approach: they pose questions about the nature and properties of the matter under consideration, and describe experiments which can be performed at home in answer to the questions. (Grades 5–9)


——. Drop by Drop: A Look at Water. 64 pp.

Stone, A. Harris, and Bertram M. Siegel. Have a Ball. 63 pp.

Stone, A. Harris, and Herbert Spiegel. The Winds of Weather. 64 pp.

Weiss, Harry. Motors and Engines and How They Work. Illus. with photographs and diagrams. New York: Crowell, 1969. 62 pp. Detailed explanation of how motors work, clear diagrams for building models (as toys or for actual work), as well as a discussion of the need for finding new sources of energy to run motors, including a few unlikely to occur to most readers. (Grade 4–up)


Hoists, Cranes, and Derricks. Compares three types of lifting machines, with some attention to the skills needed to operate them.

Machine Tools. Describes and explains the functions of major manufacturing tools. Both books in this series are enhanced by labeled diagrams and illustrations.

THE ENVIRONMENT


Clark, Ann N. *Along Sandy Trails*. Photographs by Alfred A. Cohn. New York: Viking, 1969. 31 pp. A little Papago Indian girl and her grandmother walk the Arizona desert together, talking to each other about the flora and fauna, so the child "may know the desert and hold its beauty in her heart forever"; full-color photographs. (Grades 2–5)


Davies, Delwyn. *Fresh Water: The Precious Resource*. Illus. with photographs and diagrams. Garden City, N.Y.: The Natural History Press, 1969. 155 pp. Consideration, from a worldwide point of view, of the basic relationship between man and water, with attention to problems of pollution and purification; a volume in the Natural History Library, reviewed by and published for the American Museum of Natural History. (Grades 7–9)

Hogner, Dorothy C. *Birds of Prey*. Illus. by Niis Hogner. New York: Crowell, 1969. 132 pp. Basic information on the appearance, the habitat, and the feeding and nesting habits of 49 such dramatic creatures as hawks, eagles, falcons, and owls, with notes on the conservation efforts to save some which are particularly beneficial to man. (Grades 4–6)


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**Wild Refuge**. Illus. with photographs. Garden City, N.Y.: The Natural History Press, 1969. 151 pp. Poetic prose and striking photographs describe the development of the National Wildlife Refuges and how they have saved scores of species from extinction. Includes a partial list of the wildlife refuges, primarily those on which managers live. (Grade 5–up)


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**The Only Earth We Have**. New York: Macmillan, 1969. 86 pp. A concise, honest
statement of man's abuse of his planet (the reduction of wildlands, pollution of the air, and use of insecticides) documented with telling photographs. (Grades 5–8)

Smith, Frances C. The First Book of Swamps and Marshes. Illus. with photographs. New York: Watts, 1969. 64 pp. A wealth of information about the different types of wetlands, their importance to man, and the plants and animals found in each. (Grades 6–9)

Van Leeuwen, Jean. One Day in Summer.

BIOLOGY

Animals


Freschet, Berniece. Beaver on the Sawtooth. Illus. by Matthew Kalmenoff. New York: Crowell, 1969. Unpaged. The account of a pair of beavers, who, as they build a dam, make their house, gather food, and raise a family of three, make particular contribution to the environment. (Grades 1–4)


Graphic account of a young deer's life in a Connecticut marsh, his rivalry with a fierce old buck bent on battle, and their place in the ecology of the region. (Grades 4–8)

Gray, Robert. *The Great Apes: The Natural Life of Chimpanzees, Gorillas, Orangutans, and Gibbons*. Illus. with photographs. New York: Norton, 1969. 144 pp. In a discussion of the general characteristics of the four different types of great apes and their customs and family life, the author dispels many myths surrounding these animals. (Grades 5–9)


Hazelton, Elizabeth B. *Sammy, the Crow Remembered*. Photographs by Ann Atwood. New York: Scribner, 1969. Unpaged. Pet crow returns from the wilds to the cliff house by the sea, renewing old friendships with other animals and with children. (K–Grade 5)


Rippey, Charles L. *Mosquitoes*. Illus. by author. New York: Morrow, 1969. 64 pp. Only female mosquitoes bite warmblooded creatures; this fact and the reason are among the detailed information on mosquitoes and how they have affected history; simply told and appropriately illustrated. (Grades 3–5)


Shepherd, Elizabeth. *Jellyfishes*. Illus. by Howard Berelson. New York: Lothrop,
Little known facts about the many kinds of jellyfishes, suggestions to swimmers on how to avoid them, and directions for making a jellyfish model. (Grades 3–7)


Sucksdorff, Astrid Bergman. *The Roe Deer.* Illus. by author. Translated from Swedish by Alan Tatose. New York: Harcourt, 1969. Unpaged. Appealing photographs and informative text describe the life cycle of the Roe Deer beginning with the mating season in July through harsh Swedish winters when food is scarce, to birth in spring and the mother's care of the young until they can venture out alone. (Grade 3–up)


Plant Life


Budlong, Ware T. *Performing Plants.* Illus. by Gramps Miller. New York: Simon & Schuster, 1969. 96 pp. Discusses varying patterns of plant behavior, including sensitive and carnivorous plants and symbiosis, with directions for simple at-home experiments for growth and demonstration. (Grades 5–9)

Edlin, Herbert L. *Plants and Man: The Story of Our Basic Food.* Illus. with photographs and diagrams. Garden City, N.Y.: The Natural History Press, 1969. 253 pp. This is a volume of the Nature and Science Library, reviewed by and published for the American Museum of Natural History. (Grades 7–9)

Fenten, D. X. *Plants for Pots: Projects for Indoor Gardeners.* Illus. by Penelope Naylor. Philadelphia: Lippincott, 1969. 128 pp. Detailed instructions for working with many kinds of indoor planting for home or school, including special projects for each month of the year. (Grade 4–up)

Huntington, Harriet E. *Let's Look at Flowers.* Illus. by J. Noel. Garden City, N.Y.: Doubleday, 1969. 60 pp. The parts of flowers are described and documented by the author's photographs. Information on their growth, care, and distribution is included. (Grades 3–6)

Selsam, Millicent E. *Peanut.* Photographs by Jerome Wexler. New York: Morrow, 1969. 48 pp. Arresting photographs, some in color, illustrate little known facts about each stage of development of this familiar food. (Grades 3–5)

Health

the earlier publication *From Magic to Medicine*, using a historical approach. (Grades 6–9)


Rosenberg, Nancy, and Reuven K. Snyderman. *New Parts for People: The Story of Medical Transplants*. New York: Norton, 1969. 126 pp. Discusses in nontechnical language the problems of replacing wornout organs and parts, grafting skin, and the efforts to prevent the body’s rejection of transplants, as well as the legal, social, and moral issues involved. (Grades 6–12)


Terry, Luther L., and Daniel Horn. *To Smoke or Not to Smok*. Illus. by Robert Quackenbush. New York: Lothrop, 1969. 64 pp. Terse and simple discussion of how the habit starts and of its often painfully tragic end, with many common questions answered along the way. (Grades 6–9)

THE EARTH AND SPACE

Anderson, Poul. *The Infinite Voyage: Man’s Future in Space*. Illus. with photographs. New York: Crowell-Collier Press, 1969. 160 pp. Discusses man’s beliefs about the heavens, and his experiments in charting the skies, from ancient times down to and including space flights; describes plans for lunar landings, and an imaginary Luna City. (Grades 7–12)

Angrist, Stanley W. *How Our World Came to Be*. Drawings by Enrico Arno. New York: Crowell, 1969. 75 pp. Ancient myths and current scientific theories are detailed as they relate to the creation of the universe and our solar system. Many photographs. (Grades 5–8)

Branley, Franklyn M. *The Milky Way: Galaxy Number One*. Illus. by Helmut K. Wimmer. New York: Crowell, 1969. 126 pp. Presents man’s accumulated knowledge about our galaxy since the discoveries made by Ptolemy; the relatively new field of radio astronomy and the evolution of the Milky Way are also discussed. (Grade 6–up)

——. *A Book of Venus for You*. Illus. by Leonard Kessler. New York: Crowell, 1969. 72 pp. Explicit diagrams, charts, and simple prose help dispel some of the mysteries about the planet whose surface man has not yet seen. (Grades 2–4)


Halacy, D. S., Jr. *Colonization of the Moon.* Illus. with photographs and drawings. Princeton, N.J.: Van Nostrand, 1969. 159 pp. Describes the moon, man's efforts to reach it, and the possibility of men living there, as well as the potential uses of the moon, including its function as a stepping stone to deeper space. (Grades 4–8)

Holder, William G. *Saturn V, the Moon Rocket.* Illus. by Martha Shields. New York: Messner, 1969. 190 pp. Traces man's dream of reaching the moon, from the Chinese in his chair to the teamwork required of individuals, governments, and industry in the launching of Saturn V, the Moon Rocket. (Grades 6–10)

Ross, Frank X. *Model Satellites and Spacecraft: Their Stories and How to Make Them.* Illus. with photographs and diagrams. New York: Lothrop, 1969. 159 pp. The purposes and history of 12 American satellites and spacecraft are explained, and directions are included for constructing models of each from simple materials. (Grades 5–9)


**MATHEMATICS**


Linn, Charles F. *Puzzles, Patterns, and Pastimes from the World of Mathematics.* Illus. by Lou Myers. Garden City, N.Y.: Doubleday, 1969. 136 pp. Puzzles and mathematical games, both ancient and modern, to test the skill of the reader and to stimulate him to develop similar ones, and above all to provide hours of entertainment. (Grades 5–8)

SCIENCE FICTION

Bova, Ben. *The Dueling Machine*. New York: Holt, 1969. 247 pp. In this story about a complex interplanetary society a young Star Watchman masters the problems of the machine whose socially therapeutic value has been negated by political opportunists bent on galactic villainy. (Grades 5–9)


Davies, L. P. *Dimension A*. Garden City, N.Y.: Doubleday, 1969. 206 pp. When an eminent scientist disappears unaccountably, his colleague, his nephew, and a young friend prove their suspicions that Dr. Mayer has slid through another dimension into a coexistent world. (Grades 6–9)

Dickinson, Peter. *The Weathermonger*. Boston: Little, Brown, 1969. 216 pp. In a rousing fantasy-science-fiction hybrid set 5 years in the future, a brother and sister condemned as witches in a mysteriously confused Britain untangle knots caused by the premature awakening of Merlin. (Grades 5–9)


PICTURE BOOKS AND EASY READING

Carrick, Carol and Donald. *Swamp Spring*. New York: Macmillan, 1969. Unpaged. Illustrations and prose convey the wonder, the beauty, and the mood of spring in a swamp. (K–Grade 3)


Chenery, Janet. *Wolfie*. Pictures by Marc Simont. New York: Harper, 1969. 64 pp. An introduction to the arachnid family, which is genuinely funny both in the story and in the pictures of two little boys secreting their pet spider from a nosy little sister while they conduct their research on its habits. (K–Grade 3)


counting book with simple situations, pictured in color, of an increasing company of teddy-bear toys. (PreS–K)


Tresselt, Alvin. It’s Time Now! Illus. by Roger Duvoisin. New York: Lothrop, 1969. Unpaged. Brightly colored illustrations will help young readers follow the changes each season brings in nature and life around them. (K–Grade 3)
II. TEXTBOOKS FOR ELEMENTARY AND SECONDARY SCHOOLS

The compiler of this section has included all recent textbooks in science and mathematics which were received in the Educational Materials Center in 1969 and early 1970. No attempt has been made to evaluate these publications. The listing is arranged by curriculum area; within each area, arrangement is alphabetical according to publisher.

MATHEMATICS

Allyn and Bacon, Inc., Boston.

First Course in Fundamentals of Mathematics, by Edwin I. Stein. Rev. ed. 1969. 404 pp. This edition is a complete textbook in contemporary arithmetic that attempts to meet the many and varied requirements of today's new programs in mathematics. The practice material is usually graded by difficulty. (Junior high school)


Motion Geometry, by Joe McKeeyb Phillips and Russell E. Zwoyer, based on earlier editions written by staff members of the University of Illinois Committee on School Mathematics. 1969. Paperback. Teacher's edition for each.


This course grew out of an approach to geometry put forward by European mathematics educators in late 1963 — namely, geometry through isometric mappings. Intended for use both as a basal series and to supplement more standard type series. (Grade 7)

Stretchers and Shrinkers, Books 1, 2, and 3, by Peter G. Braunfeld, assisted by O. Robert Brown, Jr., L. Roland Genise, and others of the staff of the University of Illinois Committee on School Mathematics. 1969. Paperback. Teacher's edition for each.

D. C. Heath and Company (A Division of Raytheon Education Company), Lexington, Mass.

New Ways in Numbers, Books 1–6, by Mary Hatzo and Sigmund A. Frith; Books 7–8, by Mary Alice Horrigan, with Sigmund A. Smith. 2d ed. 1969. Paging varies. Paperback. A modern mathematics program growing out of summer workshops in which classroom teachers prepared manuscript material. In this second edition arrangement and treatment of topics have been revised for improvement of presentation. Teacher's edition for each text. (Grades 1–8)


Explorations in Mathematics, by Arthur J. Wiebe and James W. Goodfellow. Teacher’s edition. 1970. 504 pp. Provides an additional mathematics program for students who have experienced difficulty in learning mathematics. (High school)

Pre-Algebra Mathematics, by Eugene D. Nichols. Rev. ed. 1970. 494 pp. Designed for a modern general mathematics course, or for a course to precede a modern course in algebra. (Grades 7–12)

Houghton Mifflin Company, Boston.

Modern School Mathematics: Structure and Use, Books 1–6 by Ernest R. Duncan and others. Rev. ed. 1970. Paging varies. This series, which is available in both graded and nongraded editions, attempts to incorporate the findings of research organizations and committees that have been working to adapt the content and method of modern mathematics to the elementary level. Supplementary materials include practice tapes, manipulative aids, diagnostic tests, workbooks, as well as annotated teacher’s editions. (K–Grade 6)

Modern School Mathematics: Structure and Method, by Mary P. Dolciani and others. Rev. ed. 1970. Courses 1 and 2. Paging varies. The authors have been guided by their belief that one learns mathematics by doing mathematics so that a proper balance between theory and practice is essential. Consideration has been given to the work of various persons and committees conducting experimental mathematics programs. Teacher’s editions available along with other supplementary materials. (Grades 7–8)


Modern School Mathematics: Geometry, by Ray C. Jurgensen and others. 1969. 660 pp. Algebra and geometry are integrated in a chapter on number properties in certain postulates, coordinate geometry, and transformations. Plane geometry is extended to solid geometry throughout the text to demonstrate spatial relationships. In addition to an annotated teacher’s edition, progress tests, and a solution key, there is a programed practice exercise book by Persis O. Redgrave and James J. Roberge keyed to the text. (Grades 9–12)

Modern Introductory Analysis, by Mary P. Dolciani and others. 1970. 668 pp. A precalculus text with major emphasis on the study of functions. (High school)

School Mathematics: Geometry, by Richard D. Anderson and others. 1969. 716 pp. Considered by the publisher as a highly teachable version of School Mathematics Study Group Geometry. Unifies plane and space geometry. Contains detailed discussions on logic, language, and deductive systems to help students realize that mathematics has a structure that transcends a collection of formulas and diagrams. (Grades 9–12)

Patterns in Mathematics, by George F. Edmonds and others. Rev. ed. 1970. 310 pp. Designed as an integrated full-year course to stimulate students of limited interest and ability. (High school)

Modern Trigonometry, by William Wooton and others. Rev. ed. 1969. 423 pp. Sets, functions, and number systems are used to present trigonometry in the context of modern mathematics. There is a teacher’s edition, and other supplementary material. (Grades 9–12)
Modern Coordinate Geometry: A Wesleyan University Curricular Study. Supported by the National Science Foundation. 1969. 446 pp. Algebra is fused with geometry through a small number of powerful axioms which are then used in providing traditional theorems of geometry. A commentary and solution key is provided for the teacher's use only. This text for high school honors classes is an experiment in the initial presentation of formal geometry as a subject of current, as well as of historical, mathematical interest. (Grades 9-12)


Contemporary Mathematics Readiness, by Rose Anita McDonnell and others. Teacher's edition. 1969. 105 pp. Paperback. An attempt to meet the goal of looking beyond immediate needs and preparing the child to live in the ever-expanding world of science. (K-Grade 1)


Adventures in Mastering Mathematics, by Evelyn Farmer and Sophie Sussman. Book A.

Progress in Mastering Mathematics, by Blanche Gladstone and Eva L. Pollack. Book B.

Experiences in Mastering Mathematics, by Sara P. Davis and Doris Hadler. Book C.

Challenges in Mastering Mathematics, by Matthew Scaffa. Book D.

Explorations in Mastering Mathematics, by Otto S. Schmidtmann. Book E.

Teacher's edition. 1969. Paging varies. Paperback. These editions published in 1969 are part of a series designed to provide a modern mathematics course for the average student. Manual and key to teacher's editions prepared by Joseph Gehringer. (Grades 7-9)

Scott, Foresman and Company, Glenview, Ill.

Mathematics: Concepts, Applications. Second Course, by Henry Van Engen and others. Teacher's edition. 1969. 672 pp. Designed to reach and teach the majority of students. This is the eighth book in the publishers Basic Mathematics Program series. (Grade 8)


Sets, Numbers, and Systems, by Patrick Suppes and others. Book 1. Singer Mathematics Program. 1969. 438 pp. This volume is intended to help the student explore important mathematical ideas. Concepts discussed include number systems, geometry, functions, logic, probability, statistics, and the mathematics of electricity. Teacher's edition available. (Grade 7)


Three textbooks in the Wiley Mathematics Program, under the editorial direction of Roy Dubisch and Isabelle P. Rucker.

Mathematics I, by Vernon R. Hood and others. 1969. 529 pp. A text that aims to involve students in discovery and learning by doing, and to encourage critical analysis and inquiry on the student's part. (Grade 7)

Mathematics II, by Faye A. Strouts and others. 1969. 437 pp. This text attempts to develop in detail the notion of mathematics as a language, and provides further activities to develop and enhance geometric intuition. (Grade 8)

Algebra, by John E. Yarnelle and others. 1969. 470 pp. Covers such topics as the real number system, polynomials, equations and inequalities, problem solving, and mathematical sentences. (Grade 9)
GENERAL SCIENCE PROGRAMS

Follett Educational Corporation. Chicago.  
The Earth and Its Atmosphere. 64 pp.  
How Life Is Maintained. 64 pp.  
Substances Around Us Change. 62 pp.  
Work and Energy. 64 pp.  
Four booklets in an eight booklet series designed as a flexible general science course that allows students with learning problems to grasp junior high school science concepts. Booklets may be used individually or in any combination or sequence to meet curriculum guidelines. (Junior high school)

D. C. Heath and Company (a division of Raytheon Education Company), Lexington, Mass.  
Patterns and Processes of Science: Laboratory Text No. 1. 1969. 416 pp.  
Patterns and Processes of Science: Laboratory Text No. 2. 1969. 371 pp.

The Holt General Science Program  
Complete revision of these two texts resulted from the author's belief in the need for a text that can be understood by all students, not just those with superior aptitudes and abilities. Supplementary aids are available. (Grades 7–9)

SPECIFIC SCIENCES

Biology  
D. C. Heath and Company (a division of Raytheon Education Company), Lexington, Mass.  
Biology, by Elsbeth Kroeber and others. 2d ed. 1969. 646 pp. The text is divided into 11 units to meet the needs of different schools and of various groups within any single school. The units vary in length, difficulty, and appeal to different kinds of students. Supplementary aids include a teacher's manual, a workbook and laboratory manual, and comprehensive tests. (Grade 7–up)

Living Things, by Frederick L. Fitzpatrick and others. Rev. ed. 1970. 468 pp. A basal text for a life science program that aims to present biological concepts simply and concisely. (Junior or senior high school)

Modern Biology, by James H. Otto and Albert Towle. Rev. ed. 1969. 787 pp. Major revision of materials for this high school biology program. Features molecular and cellular biology, reproduction, genetics, classification, microbiology, ecology. Teacher's guide correlates text, laboratory, and testing program. Other aids include laboratory investigations, transparencies, and film loops. (Senior high school)

Modern Life Science, by Frederick L. Fitzpatrick and John W. Hole. Rev. ed. 1970. 15
584 pp. Designed to provide a wide variety of activities which encourage the learner to discover his own evidences and to make generalizations from them. (Senior high school)

Chemistry
Allyn and Bacon, Inc., Boston.

Elements of Chemistry, by Paul J. Boylan and Philip B. Weld. Rev. ed. 1969. 696 pp. Text is intended as a thorough introduction to general chemistry for the college-bound student. Emphasis is on the fundamental theories and principles on which modern chemistry rests. (Grades 7–12)


Chemistry, by Glenn H. Miller. 1969. 418 pp. Designed for nonscience liberal arts students who wish to broaden their general education. Topics chosen to give the reader insight into the modern theories of chemistry, supply him with the basic concepts, and acquaint him with the methodology of the discipline. (Senior high school)

Houghton Mifflin Company, Boston.

Chemistry: An Investigative Approach, by F. Albert Cotton and Lawrence D. Lynch. 1970. 660 pp. Based on the original Chemical Education Material Study textbook, Chemistry—An Experimental Science, this text places emphasis on the activities of experimentation and observation. (Senior high school)

Earth Sciences

Modern Earth Science, by William L. Ramsey and others. Rev. ed. 1969. 550 pp. Annotated teacher’s edition. Major revision reporting on the characteristics and forces of the earth. Using an interdisciplinary approach, this program presents the earth as a complex body whose form and development can be understood as a result of the operation of basic processes. Also available are laboratory experiments and other supplementary aids to the text. (Grade 7–up)

Charles E. Merrill Publishing Company, Columbus, Ohio.

Focus on Earth Science, by Margaret S. Bishop and others. 1969. 534 pp. Study of the planet Earth—its features, its forces, its place in the solar system, and its place in the universe. An annotated teacher’s edition and solutions manual, as well as test booklets, are available. (Junior high school)

Silver Burdett Company (a division of General Learning Corporation), Morristown, N.J.

Earth Science, by F. Martin Brown and others. 1970. 566 pp. Uses an interdisciplinary approach to the study of geology, oceanography, meteorology, and space. (Junior high school)

Physics
Allyn and Bacon, Inc., Boston.

Physics: Its Methods and Meanings, by Alexander Taffel. 1969. 566 pp. Central theme of the text is the development and evolution of the two fundamental concepts of matter and nature. Aids include teacher’s manual, laboratory manual, and test booklet. (Grades 7–12)


Foundations of Physics, by Robert L. Lehman and Clifford Swartz. 2d ed. 1969. 758 pp. Stresses fundamental and theoretical principles of physics. Text is closely oriented to an open-ended laboratory manual written especially for this approach. This edition also features biographical material on important physicists in history. Teacher’s guide is available. (Senior high school)

Silver Burdett Company (a division of General Learning Corporation), Morristown, N.J.

Physics, by Irwin Genzer and Philip Young-
ner. 1969. 762 pp. The teacher's editions of
the student text and the integrated labora-
tory manual. This program combines ideas
of the Physical Science Study Committee
and experiences of the authors. (Senior high
school)

AUXILIARY TEXTS

Mathematics

Addison-Wesley Publishing Company, Inc.,
Menlo Park, Calif.

Elementary Enrichment Mathematics Series:
Coordinates, Books a, b, c, by Stephen P.
Diliberto and Glenn E. Housh. 1969. Paging
varies. Paperback. Teacher's edition for
each. First three in a series of five pam-
phlets that presume no special mathematical
background on the part of the student.
Therefore, they may be used to supplement
any basal mathematics series. This is the
outgrowth of more than 5 year's research by
members of the University of California
Elementary School Science Project. (Grades
2–6)

Trigonometry, by Elbridge P. Vance. 2d ed.
1969. 256 pp. Paperback. Presentation is
intended both for those students who wish
to obtain an insight into mathematics as it is
applied in the world today, and those who
wish to prepare themselves for further study
in mathematics or other related fields. (High
school)

Doubleday & Company, Inc., Garden City,
N.Y.

Exploring Mathematics Series

A Question of Accuracy: Exploring Mathe-
metics, by Arthur G. Razzell and K.G.O.

Three and the Shape of Three: Exploring
Mathematics, by Arthur G. Razzell and K.

Two of several books intended for use as
supplementary materials for those who
like mathematics and want to investigate
some of the more interesting and less
frequently studied aspects of the subject.

There is a Classroom Guide for each
prepared by Charles F. Linn. (Grades
5–6)

D.C. Heath and Company (a division of
Raytheon Education Company), Lexington,
Mass.

Arithmetic for College Students, by Franklin
D. Wright. 1969. 310 pp. Although written
primarily for college students, the publisher
states the text qualifies for use with high
school students and contains enough mate-
rial for a semester course of three or more
units, depending on the goals of the instruc-
tor and the abilities of the students. The
book has been tested in preliminary form at
a number of colleges. (Grade 12)

Practice in Mathematics: Computation, Con-
cepts, Reasoning. Duplicating Masters for
Practice Worksheets, by Sigmund A. Smith.
1969. Eight booklets, 48 pp. each. These
duplicating masters have been designed to
help pupils extend their ability to think
mathematically by providing extensive prac-
tice on concepts, computational skills, and
reasoning. The practice materials can be
used at the traditional grade levels, or at any
level, to supplement the variety of contem-
porary mathematics programs now encom-
passed in the pre-high school years. Each
master can produce 50 or more copies.
(Grades 1–8)

Highlights for Children, Inc., Columbus, Ohio.

Fun With Numbers, Lines and Angles, by Ali
R. Amir-Maiz and Donald H. Menzel. High-
of mathematical games, tricks, puzzles, and
activities to be used as supplementary learn-
ing material. (Grades 1–4)

Trouble-Shooting Mathematics Skills, by Allen L. Bernstein and David W. Wells. Rev. ed. 1969. 473 pp. Designed to involve the student in his own remedial program and to bridge the gap between modern and traditional treatments of fundamental skills. Places emphasis on the techniques of problem solving, mental arithmetic, and estimating reasonable answers. An annotated teacher’s edition is available. (Grades 7—12)

Houghton Mifflin Company, Boston.

Fibonacci and Lucas Numbers, by Verner E. Hoggatt, Jr. Mathematics Enrichment Series. 1969. 92 pp. Paperback. Treats geometric applications of Fibonacci numbers, as well as many relationships between those numbers and the similarly defined Lucas numbers. Prerequisites: 1 year of geometry, 2 years of algebra. (Grades 9—12)


Limits: A Transition to Calculus, by O. Lexton Buchanan, Jr. 1970. 188 pp. Paperback. With this text students may develop an understanding of the concept of limit as a preparation for work in calculus. (Senior high school)

Modern Mathematics for Achievement; First, and Second Courses, by Marian Cliffe Herrick and others. Rev. ed. 1970. 46 pp. each. Paperback. Two 1-year general mathematics texts for low achievers. Each course is divided into eight booklets. The second course of this program may be taught in sequence with the first course or independently. There are teacher’s editions for each booklet, and a teacher’s guide for each course. Tailored to the interests and abilities of students whose mathematical aptitude is low or whose background in the subject is meager. (Junior high school)

McGraw-Hill Book Company, Webster Division, St. Louis, Mo.


South-Western Publishing Company, Cincinnati, Ohio.

Mathematics Skill Builder. Practical exercises and tests, shortcuts, self-improvement scoring, by Loyce C. Gossage and Milton Briggs. 3d ed. 1969. 162 pp. Paperback. Designed for students wanting to attain accuracy and build speed in the fundamental operations of addition, subtraction, multiplication, and division. (High school)

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Designed to enrich the content of science programs. (Junior or senior high school)

Albert Witman and Company, Chicago.

The Working-With-Science Series, by E. A. Catherall and P. N. Holt. 1969. 48 pp. each. Four individual titles: Working With Light, Magnets, Sounds, Water, which the publisher recommends for the slow reader because of high interest and low vocabulary levels. (Grade 4—up)
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