

FREE GUIDES

are offered by IFB for the following 16mm sound films

Analysis by Mass Archaeologist & How He Works	The Development of Electrochemistry	Prelude to Power
Around a Big Lake	Discovery of Radioactivity	The Red Planet—Mars
Beach and Tidepool Life	Discovery of Inert Gases	Report on Down's Syndrome
Birds and Migration	Exploring Unwritten Past	Singing Frogs & Toads
Birth of the Red Kangaroo	Fall Is Here	Spring Is Here
The Boreal Forest	Fight Against Microbes	The Stream
Conquest of the Atom	Insect Tissue Culture	Summer Is Here
Conservation and Balance in Nature	Life in Deciduous Forest	Vacant Lot
	Newton's Equal Areas The Prairie	Wild Highlands
		Winter Is Here

Circle the teacher's guides you would like to receive and send this ad to us, along with your name and address. You may also request a complete catalog of science films and filmstrips, along with information on how to order.

INTERNATIONAL FILM BUREAU INC.

332 S. Michigan Ave. (SN), Chicago, Ill. 60604

Are You Looking for a Special Book
. . . for Yourself . . . for a Gift?

Book Order Service-Science News

will gladly order and pay postage for any American Book now in print. This Department fills orders for books on Music, Art and Fiction as well as Science.

When ordering a book, please list . . . Title, Author, Publisher, Price and your complete return address including your Zip Code.

Remit the retail price. Add 25c handling charge if book is less than \$2. If retail price is unknown, send \$5.00 with order. Price adjustment will be made promptly.

Book Order Service-Science News

1719 N St., N.W., Washington, D. C. 20036

202-667-2255

SCIENCE NEWS

Copyright © 1969 by Science Service, Inc. Republication of any portion of SCIENCE NEWS is strictly prohibited.

Subscription rate: 1 yr., \$7.50; 2 yrs., \$13.50; 3 yrs., \$19.50. Special trial offer: 39 weeks, \$3.97. Single copy, 25 cents. No charge for foreign postage. Change of address: Three weeks' notice is required. Please state exactly how magazine is addressed. Include zip code.

Printed in U.S.A. Second class postage paid at Washington, D. C. Established as Science News Letter® in mimeograph form March 13, 1922. Title registered as trademark U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide and the Engineering Index. Member of Audit Bureau of Circulation. UNSOLICITED MANUSCRIPTS will not be returned unless accompanied by a stamped, self-addressed envelope.

Published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington, D. C. 20036. North 7-2255. Cable Address: SCIENSERV.

ADVERTISING

L. D. Young, Advertising Director, SCIENCE NEWS, 1719 N St., N.W., Washington, D. C. 20036, Phone 202-667-8945.

Advertising Representatives: SCRIPPS-HOWARD NEWSPAPERS. General Advertising Department: 200 Park Ave., New York, N.Y., TN 7-5000; 400 N. Michigan Ave., Chicago, Ill., SU 7-3355; Suite 211, Braniff Building, Dallas, Tex., PL 7-3847; 908 E. Northland Tower, Southfield, Mich., 444-4595; 6363 Wilshire Blvd., Los Angeles, Calif., OL 3-0026; Room 1522, Philadelphia National Bank Building, Philadelphia, Pa., LO 3-6275; 100 California St., San Francisco, Calif., 989-5570; Suite 417, 3384 Peachtree Rd., N.E., Atlanta, Ga., 261-5171.

252/science news/vol. 95/march 15, 1969

films OF THE WEEK

Listing is for readers' information of new 16mm and 8mm films on science, engineering, medicine and agriculture for professional, student and general audiences. For further information on purchase, rental or free loan, write to distributor.

ASSAULT ON LIFE. 16mm, b&w, sound, 50 min. This is a frank questioning examination of some recent advances in biological research, with all its ramifications. A scientist has already fused living human and mouse cells; rabbits' eggs are fertilized in a jar and the same may be done soon for humans. What can this lead to? Not far in the future live the consequences of research being done with DNA. Here the possibilities are staggering, for involved is the power to alter our genetic future as individuals and our evolution as a species. Discusses questions which are being raised by this research, and the possible consequences. Audience: general. Purchase \$300 or rental \$35 from Peter M. Roebuck and Co., 230 Park Ave., New York, N.Y. 10017. (Produced by BBC-TV.)

EROSION. 16mm, color, sound, 10½ min. In the southwestern United States, on the Colorado Plateau, are found some of the most spectacular landscapes on earth. How were such landscapes created? Film shows that their distinctive features, like many landforms everywhere, were created by the removal of loose earth material. Moving water, and to a lesser extent wind, are the agents of erosion and the architects of the earth's landscapes. Audience: elementary, junior high. Purchase \$125 from Film Associates, 11559 Santa Monica Blvd., Los Angeles, Calif. 90025.

THE EVOLUTION OF HANDS. 16mm, color, sound, 10 min. Demonstrates that evolution is a process of slow adaptation and improvement that equips animals to survive in changing natural environments. An initial consideration of human hands and how they help us serves to introduce an in-depth study of gradual adaptations in the "hands" of representative mammals, amphibians, birds and reptiles. Through the comparative examination of prehistoric and living specimens, film shows the slight physical changes that have occurred over thousands of generations to produce such variations as the paw of a dog, hoof of a horse, or the flipper of a sea lion. Audience: intermediate, junior high. Purchase \$120 from Journal Films, 909 W. Diversey Parkway, Chicago, Ill. 60614.

GERM AND CHEMICAL WARFARE. 16mm, b&w, silent, 30 min. Shows actual tests and effects of killer or incapacitating gases, and a simulated attack where two men, by releasing a germ cloud in the air, incapacitated an entire military installation. Raises the disturbing question of the morality of developing such weaponry, and the possible value in deterrent effect through retaliatory capabilities. Scientists in film express their fears that unbridled use could contaminate the land, sea and air of the entire planet. Audience: Health, civil defense, church, and adult groups; high school and college classes. Purchase information from Carousel Films, 1501 Broadway, Suite 1503, New York, N.Y. 10036. (Excerpted from CBS News program "60 Minutes".)

HUMAN REPRODUCTION. 8mm or Super-8mm, b&w, silent. Six films on the following subjects: Menstruation; Fertilization; Embryology I—Preparation in the Womb; Embryology II—Growth and Development; Embryology III—Development of Bone; Lactation. Purpose of series is to help students recall facts and ideas that have already been presented during the textbook unit on human reproduction. Includes microphotograph and animation. Audience: biology, sex education and family living classes in grade levels upper elementary through senior high. Purchase 8mm \$9.50 each and Super-8mm \$12.50 each from Universal Education and Visual Arts, 221 Park Ave. S., New York, N.Y. 10003.

THE INVERTEBRATES. Super-8mm, color, silent. Forty-two cartridge film loops for studying classification, structure, behavior and ecology. Each loop depicts a living animal in its natural habitat. Structures and processes are examined by various cinematographic techniques. When organized taxonomically, series represents each important class of the major invertebrate phyla: Porifera, Coelenterata, Platyhelminthes, Aschelminthes, Mollusca, Annelida, Arthropoda and Echinodermata. Audience: biology classes. Purchase information from Thorne Films, Dept. NR-5, 1229 University Ave., Boulder, Col. 80302.

LET'S SEE THE ANIMALS. 8mm, color, silent. Twenty-three cartridge loops, 3-4 min. each. About the common animals which the child may see on the farm, at home, or at the zoo. Allows the child to observe more closely the similarities and differences among these animals. Includes

common native animals, the camel, the lion, shore birds, land birds, seals, elephants, monkeys, etc. Audience: kindergarten through third grade. Purchase \$20 each or \$415 for the set of 23 from McGraw-Hill Films, Dept. DF, 330 W. 42nd St., New York, N.Y. 10036.

NUCLEAR PROPULSION IN SPACE. 16mm, color, sound 24 min. Illustrates the principle of the nuclear rocket, and the possible future use of such a propulsion system as the third stage of a Saturn rocket. Compares nuclear propulsion to chemical and electric propulsion for space vehicles; shows the development of the nuclear engine; and describes how such a rocket might one day be used in a manned flight to another planet. Audience: general. Free loan information from National Aeronautics and Space Administration Headquarters, Code FAD, Washington, D.C. 20546.

PERSPECTIVE ON PUGET SOUND. 16mm, color, sound, 27 min. Tells the story of the industrial, agricultural and recreational assets and advances in the Puget Sound area of the state of Washington, with particular emphasis on the city of Everett and the county of Snohomish. Audience: industrial and business persons, students. Free loan from Washington State Department of Commerce and Economic Development, General Administration Bldg., Olympia, Wash. 98501.

TENNESSEE AND ITS NATURAL RESOURCES. 16mm, color, sound, 28 min. Shows how the prosperity of Tennessee stems from a program which combines wise use of resources with abundant electric power. Resources aiding the state's growth include forests, water, minerals, soil and people. Many years ago, however, early timber-cutting practices stripped the watersheds of forest cover, causing erosion and flooding. The resurgence of the state's economy is traced to the forming of the Tennessee Valley Authority, which along with other agencies, built dams to harness the rivers. Scenes shown in film include mining, manufacturing and the growth of educational and cultural institutions. Audience: school, civic and scientific groups, and other groups interested in conservation. Free loan from Motion Pictures, Bureau of Mines, 4800 Forbes Ave., Pittsburgh, Pa. 15213.

WATER: A FIRST FILM. 16mm, color, sound, 9 min. Water is an important part of our world (with it nothing can live). Where there is little water, the land may be desert for plants and animals cannot live without water. It is very important in our lives. We drink it, cook with it, water our gardens and lawns with it, and fight fires with it. Understanding the importance of water and its uses, as well as how to misuse it, are important concepts for young children. Audience: primary. Purchase \$120 from Film Associates, 11559 Santa Monica Blvd., Los Angeles, Calif. 90025.

WOOD BENDING: A NEW TWIST. 16mm, color, sound, 13 min. Shows the new process of bending wood by using anhydrous ammonia. Quality furniture makers have long been bending wood by the heat and moisture process, but with this new method, the bend may be greater and is completely retained by the wood. Also many types of wood which were unsuitable for the heat-moisture process can now be treated with ammonia and bent. Shows how process has been adapted for industrial wood by using gaseous ammonia. Audience: industrial, college, general. Purchase \$150 or rental \$7.50 from International Film Bureau, 332 S. Michigan Ave., Chicago, Ill. 60604.

WOOD PLASTIC: A NEW DIMENSION. 16 mm, color, sound, 11½ min. Demonstrates the making of wood plastic by the catalyst-heat system, a process of injecting wood plastic into the air-filled pockets in natural porous wood. Film shows how the usual disadvantages of wood are minimized by this addition of plastic, which increases abrasive resistance and hardness. Also presented is one commercial use of this new material, the manufacture of billiard cues. Audience: industrial, college, general. Purchase \$135 or rental \$6 from International Film Bureau, 332 S. Michigan Ave., Chicago, Ill. 60604.

WOODWORKING MACHINE OPERATIONS SERIES. 13 super 8mm film loops on following topics: The Joiner: Basic Use. Planer: Basic Use. Circular Saw: Changing the Blade. Circular Saw: Rippling Stock—Wide and Med. Widths. Circular saw: Rippling Stock—Narrow Widths. Circular Saw: Crosscutting—Cutting Stock to Length. Circular Saw: Crosscutting—Duplicating Long Lengths. Circular Saw: Crosscutting—Duplicating Short Lengths. Bandsaw Rippling—Rough and Surfaced Stock. Bandsaw: Crosscutting. Bandsaw: Cutting Shapes. Drill Press: Boring Various Holes. Audience: industrial education students. Purchase \$200 for package of 13 films from Film Associates, 11559 Santa Monica Blvd., Los Angeles, Calif. 90025.

The "wheelbarrow" you roll with one hand!



Weight rests on the axle and 2 big wheels, not on your back! Carry up to 300 lbs. **WITHOUT STRAIN.** This amazing cart is made to last by Vermont craftsmen with tight-welded, all-steel body and ball bearings. No stooping with high handle. Tilting front lets you load from the ground. Holds twice as much as regular wheelbarrow. **FREE CATALOG** illustrates more unique features and details.

VERMONT-WARE
Box 7703, Hinesburg,
Vermont 05461

Name _____
Address _____
Zip _____

UNUSUAL BARGAINS FREE! GIANT CATALOG

SEE MUSIC IN DAZZLING ACTION **MUSIC VISION**



DRAMATIC BREAKTHROUGH IN AUDIO-VISUAL ENJOYMENT

See your favorite music translated into fantastically colorful patterns; each note creating its own unique, everchanging image in perfect time with the music. Easily attached to stereo, radio, tape recorder. Send 25c in coin for 16-page booklet #1006Q.
No. 85.181—WALNUT CABINET MODEL \$99.50 FOB
No. 71.030Q—8" SET 45.00 Ppd.
No. 71.009Q—8" DO-IT-YOURSELF KIT 22.50 Ppd.

WOODEN SOLID PUZZLES

12 Different puzzles that will stimulate your ability to think and reason. Fascinating assortment of wood puzzles that will provide hours of pleasure. Animals, and geometric forms to take apart and reassemble, for all the family, young and old, to test skill, patience and ability to solve problems.
Stock No. 70.205Q \$4.00 Ppd.

WORKING MODEL DIGITAL COMPUTER Actual Miniature Version of Giant Electronic Brains



Solves problems, teaches computer fundamentals. Adds, subtracts, multiplies, shifts, complements, carries, memorizes, counts, compares, sequences. Colored plastic parts easily assembled. 12" x 3½" x 4¾". Incl. step-by-step assembly diagrams, 32-page instruction book covering operation, computer language (binary system) programming, problems and 15 experiments.
Stock No. 70.683Q \$5.98 Ppd.

IT'S HERE—BIG, NEW DIGICOMP III

Stock No. 70.946Q \$16.00 Ppd.

Order by Stock No.—Send Check or M.O.—Shipment same day received—Satisfaction or money back.

Edmund Scientific Co.,
300 Edscoep Bldg., Barrington, N.J. 08007

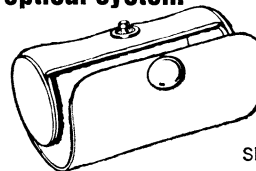


EDMUND SCIENTIFIC CO.
300 Edscoep Building
Barrington, New Jersey 08007
Completely new 1969 Edit. 148 PAGES
—4000 UNUSUAL BARGAINS.
Please Rush Giant Free Catalog "Q"

Name _____
Address _____
City _____ State _____ Zip _____

more than just a telescope more than just a microscope

emoskop a complete vestpocket optical system



Shown actual size

We went to Wetzlar, Germany (world capital of fine optics) to find such perfection at such a price. Remove the EMOSKOP from its fitted leather case and it is a 30x microscope. A twist of the wrist converts it to a 3x telescope (ideal for theater, field or sky) or a unique 3x telescope-loupe. Another change and you have your choice of 5x, 10x or 15x magnifying glasses. The perfect vest-pocket companion for exacting professionals and scientists and all those who wish to observe anything closely and clearly. A most discreet opera glass. If you make a fetish of quality, the EMOSKOP will do you proud. Coated lenses, fully achromatic, absolutely flat field. Modern Photography Magazine calls the EMOSKOP "... the only magnifier worthy of the name."

Send me the EMOSKOP. I enclose \$15.95 (\$14.95 plus \$1 postage and insurance). Calif. residents add 5% tax. Refund within 10 days if not delighted. **SN-0315**

Name _____
Address _____
Zip _____

584 Washington,
San Francisco 94111
Phone (415) 981-5688

haverhill's