This guide, designed for teachers and community leaders attempting to answer questions being raised about population and population trends or developing population study programs, contains a selective list of information sources and written audiovisual resource materials. The resource guide is divided into five areas. The first group lists over 40 entries, including private organizations, public agencies, and universities. The second area lists teacher resources, including background and theory materials, curriculum and study guides, reference guides, newsletters and periodicals, and readings. The third area looks at both teacher and student resources, including curriculum and study guides, data, reference guides, and readings. Student resources include all of the above including texts. The final area, audiovisual aids and activities, presents charts, films, and games. Over 125 entries are included in the resources sections. (Author/JR)
population education: sources and resources
WHAT
Is the current U.S. population growth rate?
Is zero population growth?

HOW MANY
people are born every minute in the United States?
people are born every minute in the world?
elderly will be living in the United States by the year 2000?
persons are/there under 15 years of age?

HOW
does population size or distribution affect food or energy use?
does population size or distribution affect the status of women?

WHERE
can the answers be found?

Population Education: Sources and Resources is designed for use by teachers and community leaders attempting to answer these and other questions being raised about population. It contains a listing—by no means exhaustive—of information sources and written and audiovisual resource materials. It can also serve as a guide for those seeking to set up local programs or workshops.

September 1975

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Private Organizations

American Freedom From Hunger Foundation, 1625 I Street, N W., Washington, D C 20006, Gerald Connolly, executive director (202) 254-3487. Through its education and publication programs, the Foundation examines issues of global development such as food, population, and hunger.

The monthly Bulletin ($5) is available to members. The Issue Pack on World Hunger ($150) contains fact sheets, articles, and a bibliography.

Center for Information on America, P O Box C, Washington, Conn 06793, Todd Scudder, president and editor (203) 868-2602. The Center is a research and educational organization dedicated to informing the public about America through its publications. Its population education program aims at increasing public knowledge of the components of population change.

The Center publishes a series entitled Vital Issues (10 numbers at $4 per year). For a discussion of its Population Profiles see page 12.

Center for War/Peace Studies, 218 East 18th Street, New York, N Y 10003, Lawrence Condon, program director (212) 475-9850. The Center is concerned with educational development, research, and consulting to increase awareness of global problems of conflict and social change. Its program focuses on levels K through 12. For a discussion of its publications, see Intercom on page 11.

Earthrise, Inc., P O Box 120, Annex Station, Providence, R I 02901, Russell Kolton, director (401) 274-0011. Earthrise is engaged in research, education, and design focused on energy. It conducts Futures Workshops as well as the Futures Laboratory (associated with the University Without Walls). The last is an ongoing program leading to the B.A. degree.

The bi-monthly Earthrise Newsletter ($3 to students, $5 to individuals, and $10 to institutions) reports on futurology.

For a reference to the organization's Global Futures Game, see page 21.

Environment-Population Education Services, 21 Merritt Street, Hamden, Conn. 06511, Lawrence Schaefer, president (203) 888-1436. This community group promotes and aids environmental and population education through the development of curriculum materials.

A library of 17 population films is available to educators, primarily in New England, for a charge of between $5 and $35 according to the film's length. For a reference to the group's publication An Introduction to Population, Environment and Society, see page 9.

ERIC (Educational Resources Information Center) Clearinghouse for Social Studies/Social Science Education, 855 Broadway, Boulder, Colo 80302, User Services coordinator (303) 492-8434. The Clearinghouse collects, reviews, abstracts, and indexes current educational materials, including population studies. As they relate to social studies curricula in both primary and secondary grades. Bibliographic and reference services are provided to libraries, organizations, and individuals.

The 'Looking At' section of the quarterly Social Science Education Consortium Newsletter (free) announces curriculum development projects including social studies units on population.

ERIC Information Analysis Center for Science, Mathematics, and Environmental Education, 400 Lincoln Tower, Ohio State University, 1800 Cannon Drive, Columbus, Ohio 43219, Robert Howe, director (614) 422-6717. The Center is engaged in research education and computer-based information analysis. It provides bibliographic and reference services to libraries and organizations.

Published eight times a year, the Center's SMEAC Newsletter. Environmental Education (free) covers all aspects of environmental education including population and family planning.

Institute for World Order, 1140 Avenue of the Americas, New York, N Y 10036; Betty Reardon, director, School Program (212) 575-0055. The Institute is devoted to education concerning ways in which world structures and institutions can be changed to achieve world peace and social justice. It is involved in curriculum development, teacher training, and teacher services for grades 6 through 12.

The Institute publishes a quarterly Ways and Means of Teaching About World Order ($3 per year). Also available is a list of publications on world order issues, peace, social justice, ecological balance, and economic equity. For a reference to the film Population and the Quality of Life, see page 19.
The education program focuses on integration of global perspectives into U.S. school curricula.

The quarterly People ($6 per year) is a descriptive and informative publication on population, family planning, and population activities. It is published by the Alan Guttmacher Institute, 515 Madison Avenue, New York, N.Y. 10022. The bimonthly Family Planning/Population Reporter ($11 per year) provides state laws and policy information. It is published by the Alan Guttmacher Institute, 1666 K Street, N.W., Washington, D.C. Planned Parenthood is in preparation.

The quarterly Family Planning Perspectives ($15, included in an associate membership) describes national and international population dynamics as well as program developments in family planning. It is published by the Alan Guttmacher Institute, 515 Madison Avenue, New York, N.Y. 10019. The bimonthly Family Planning/Population Reporter ($18 per year) reviews state laws and policy. It is published by the Alan Guttmacher Institute, 1666 K Street, N.W., Washington, D.C. 20006 Barry Nestor, the Washington coordinator of information services (202) 296-4012. Washington Memo (20 issues, $15 per year) reports on legislative, judicial, and administrative developments regarding U.S. public policy in family planning and population. It is available from the Washington, D.C. office.

The monthly Studies in Family Planning contains a wide range of articles on such topics as population, family planning, and program development and evaluation. The bimonthly Current Publications in Population/Family Planning provides abstracts of selected articles and books. Occasional publications are the in-depth Reports on Population and Family Planning presenting current information and the Country Profiles describing social, economic, and demographic characteristics of selected countries and the nature of their population activities. All publications are available free from the Council's Information Service.

The quarterly Population Association of America (also Planned Parenthood, World Population, 810 Seventh Avenue, New York, N.Y. 10019, Robyn Elliott, director) is a research and development division. The Council publishes and disseminates the results of its research. The quarterly Family Planning/Population Reporter ($18 per year) contains a wide range of articles on such topics as population, family planning, and program development and evaluation. The bimonthly Current Publications in Population/Family Planning provides abstracts of selected articles and books. Occasional publications are the in-depth Reports on Population and Family Planning presenting current information and the Country Profiles describing social, economic, and demographic characteristics of selected countries and the nature of their population activities. All publications are available free from the Council's Information Service.

The monthly Population Crisis Committee, 1835 K Street, N.W., Washington, D.C. 20006; James Chamberlain, youth coordinator (202) 659-1833. The Committee promotes research and mass communication/education in population studies and family planning aimed at controlling population growth. It is also concerned with legislative developments.

Published biannually, The Draper Fund Reports (free) focus on aspects of population and family planning.

Population Dynamics, 3829 Aurora Avenue North, Seattle, Wash. 98103, Martha Willing, executive officer (206) 632-5075. Population Dynamics is involved in mass communication/education with special interest in biomedical issues and family-size decisions to bring people and resources into balance.

Instructional films are available on population and contraception. For a reference to the film Beyond Conception, see page 20.

Sources

Institute of Society, Ethics, and the Life Sciences, Hastings Center, 623 Wardour Avenue, Hastings-on-Hudson, N.Y. 10706. Michael Hens, population specialist (914) 473-0500. The Institute's concerns are the ethical, legal, and social implications of advances in the life sciences, including genetic engineering, death and dying, behavior control, and population.

The bimonthly The Hastings Center Report ($18 per year) contains interesting articles for teachers and libraries. An annual bibliography is published on ethics relating to population. A packet of readings and articles on cultural values and population policy is in preparation.

International Planned Parenthood Federation (IPPF), 18-20 Lower Regent Street, London, SW1Y 4PW, England. Frank Jennett, director of information, Western Hemisphere Region Office (IPPF), 111 Fourth Avenue, New York, N.Y. 10003. Rene James, librarian (212) 533-1050. IPPF provides services, training, and mass communication/education related to family planning, demographic, and economic and social development. The library of Western Hemisphere provides bibliographic and reference services to libraries, organizations, and individuals. In 1968, the Alan Guttmacher Institute (formerly the Center for Family Planning and Program Development) was established as a research and development division to focus on the development of public policy with offices in New York City and Washington, D.C. Planned Parenthood has 186 affiliates throughout the United States. 174 are medical and 12 are educational.

The quarterly Family Planning Perspectives ($15, included in an associate membership) describes national and international population dynamics as well as program developments in family planning. It is published by the Alan Guttmacher Institute, 515 Madison Avenue, New York, N.Y. 10019. The bimonthly Family Planning/Population Reporter ($18 per year) reviews state laws and policy. It is published by the Alan Guttmacher Institute, 1666 K Street, N.W., Washington, D.C. 20006 Barry Nestor, the Washington coordinator of information services (202) 296-4012. Washington Memo (20 issues, $15 per year) reports on legislative, judicial, and administrative developments regarding U.S. public policy in family planning and population. It is available from the Washington, D.C. office.

Population Association of America, P.O. Box 14182, Benjamin Franklin Station, Washington, D.C. 20044. Mary Grace Kovar, secretary-treasurer (202) 393-3253. This scientific, professional organization promotes research on population and publishes and disseminates the results. Annual meetings have included sessions on population education since 1972.

The Association publishes quarterly Demography, Population Index, and PAA Affairs, which are all available to members ($8 for students and $25 for individuals). For a reference to Careers in Demography, see page 16.

The Population Council, 245 Park Avenue, New York, N.Y. 10017. Stephen Vier-derman, assistant director, Demographic Division (212) 687-8330. The Council provides scientific training and the study of population through the social and biomedical sciences. It also promotes population education through support of model programs, research related to the development of programs, and participation in an international network of specialists in the field. It provides bibliographic and reference services to libraries, organizations, and individuals.

The monthly Studies in Family Planning contains a wide range of articles on such topics as population, family planning, and program development and evaluation. The bimonthly Current Publications in Population/Family Planning provides abstracts of selected articles and books. Occasional publications are the in-depth Reports on Population and Family Planning presenting current information and the Country Profiles describing social, economic, and demographic characteristics of selected countries and the nature of their population activities. All publications are available free from the Council's Information Service.

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Instructional films are available on population and contraception. For a reference to the film Beyond Conception, see page 20.
The Population Institute 110 Maryland Avenue, N.E. Washington, D.C. 20002 (202) 544-3300 The Institute fosters interest in population subjects through its four divisions. These are the Organization Liaison Division (Judith Senderowitz director), which serves as a catalyst for population programs among nongovernment membership organizations, the Youth and Student Division (William Ryerson director), which sponsors an internship program for college students in State legislatures the Education Division (Geraldine Brooks director), which fosters interest in population education, and the Communications Center (David Pondexter director), which provides bibliographic reference service for secondary school teachers, curriculum materials such as "Demography and You," see page 12.


The Bureau maintains a library of 15 population films and publishes the annual World Population Data Sheet, the monthly Intercom, and the bimonthly Interchange (population education newsletter), as well as the periodicals Population Bulletin and PRB Report. All are available to teachers for a special membership of $5. Wallcharts and slides are also available. For discussions of the World Population Data Sheet, Interchange, and Population Bulletin, see pages 13, 10, 8, and 13.

Sierra Club 1050 Mills Tower San Francisco, Calif. 94104. Judith Kunofsky, population coordinator (415) 981-8643. The Sierra Club works to restore the quality of the natural environment and to maintain the integrity of the ecosystem. The Club members are organized into 45 chapters across the country. The population project encourages and coordinates educational programs about population through the provision of materials and a speakers' bureau. The monthly Sierra Club Bulletin ($6 per year) is the organization's official journal. The bimonthly Population Report (free) is a newsletter on current demographic facts and recent or upcoming events.

Urban Life-Population Education Institute, 2418 St. Paul Street, Baltimore, Md. 21218. Lester McCrea, co-director (301) 396-6627 or 396-6624. The Institute's goal is to demonstrate population realities to Baltimore Public School teachers so as to encourage the introduction of population studies into the school curriculum. The Institute's programs include workshops for teachers and developed curriculum aids.

A library of five population films is available without charge to teachers in Baltimore. For a reference to the Institute's curriculum materials such as "Demography and You," see page 12.

World Population Society, Hurst Hall, American University, Washington, D.C. 20016, Pierre Bergeon, assistant director (202) 686-3863. In affiliation with American University, the Society promotes through its annual meeting a multi-disciplinary approach to solving major world population problems.

The monthly Newsletter (included in the membership fee of $5 for students and $10 for individuals) reports on the Society's activities and general population events.

World Watch Institute, 1776 Massachusetts Avenue, N.W., Washington, D.C. 20036. Bruce Stokes, director of information (202) 452-1999. The Institute is concerned with interdisciplinary analysis of world problems and their solution before they become major crises.

Occasional papers on selected international topics such as food, environment, resources, women, and population are prepared.

Sources

Zero Population Growth, Inc., (ZPG) 1346 Connecticut Ave., N.W., Washington, D.C. 20036. Elaine Murphy, director of the Population Education Program (202) 785-0100. ZPG is involved in mass communication and education and political action in demography and family planning. ZPG's specific goal is to bring about zero population growth in the United States.

The organization's newsletter ZPG National Reporter (10 issues, $5.00 per year) reports actions of the chapters and focuses on issues such as abortion or women's rights. The membership fee is $15. For ZPG publications, see Population Education Resources, page 13. Equilibrium, page 10, and ZPG and Immigration: A Discussion Paper, page 15.
Sources

Public Agencies

United Nations Department of Economic and Social Affairs, Population Division
United Nations Plaza, New York, N.Y. 10009, Simoné Sauterot, director of Reference Center (212) 754-1234, extension 2463. The Population Division prepares studies on population, conducts research on fertility and family planning, and offers advisory services to governments. Its special focus is on developing countries.

The Demographic Yearbook ($22 paperbound) prepared by the Statistical Office includes data on land area, population, natality, mortality, nuptiality, and divorce for every country of the world. The 1973 edition is available. Determinants and Consequences of Population Trends, Volume 1 ($24) is a synthesis of major findings concerning the relationship between population trends and economic and social factors. These publications are available from the United Nations Sales Section.

United Nations Fund for Population Activities [UNFPA], 485 Lexington Avenue, New York, N.Y. 10017, Avi Green, librarian (212) 754-1235, extension 4887. UNFPA promotes awareness of the implications of national and international population change and offers multilateral technical assistance to developing countries.

The monthly UNFPA Newsletter (free) covers activities of the United Nations related to population. The monthly Population (free) contains articles on population.

U.S. Department of Commerce, Social and Economic Statistics Administration, Washington, D.C. 20233, Nelly Harris, Population Section, Data User Services Division, Bureau of the Census (301) 763-5002. The Bureau of the Census is the statistical agency of the U.S. government which collects, tabulates, and releases data about people and the economy of the United States. Its population materials come from decennial censuses and current population surveys. The Bureau incorporates the International Statistical Programs Center that researches and collects data on developing countries, especially on population and family planning. The Bureau of Economic Analysis collects data on the Nation's economy, income and wealth, and the balance of payments. This Bureau incorporates the Foreign Demographic Analysis Division, which is concerned with research on demography and on economic and social development and with data for foreign countries. The library provides bibliographic and reference services to libraries, organizations, and individuals.

The Bureau of the Census publishes decennial census reports for the Nation and for individual States as well as special subject reports. Special current series include the P-20 on population characteristics, the P-23 on current population reports, the P-25 on estimates and projections, and the P-26 on the Federal-State Cooperative Program for population estimates.


—Office of Education, Office of Environmental Education, Room 2029, 400 Maryland Avenue, S.W., Washington, D.C. 20202; program information officer (202) 245-9231. The Office sponsors grant programs for environmental education projects with particular emphasis on population dynamics.

National Institutes of Health, Center for Population Research, 9000 Rockville Pike, Bethesda, Md. 20014, Philip Corfman, director (301) 496-1101. The Center engages in biomedical research and the development and evaluation of contraceptives. It also engages in a wide variety of social and behavioral science research designed to ascertain the social, psychological, and economic determinants of fertility in the United States and to assess the consequences of population growth and change so that public policy may be guided by adequate information.


Published annually, Population Program Assistance (free) is a comprehensive review of U.S. aid programs.


The Bank publishes Sector Policy Papers on topics such as population planning, education, health, rural development, and nutrition and Working Papers, which can be useful to high school and college libraries. The annual World Bank Atlas, Population, Per Capita Products and Growth Rates has data for 189 countries. The annual Trends in Developing Countries is a chart book dealing with such topics as global indicators, population and economic growth, and social indicators. All publications are free.
The Center maintains a library of 30 population films available to educators in the Delaware region for a service charge of $3 plus postage per film. For a reference to a Conceptual Scheme for Population Environment Studies, see page 8.

Florida State University, Population Studies Program. Departments of Sociology and Social Studies Education, Tallahassee. Dr. 32306 Charles Nam professor of sociology (904) 644-2833 and Byron Mas- sialas, professor of education (904) 644-3263. The Program is involved in training (at the M.A. and Ph.D levels) and research and teaching in population education, demography, and statistics. It is also involved in the conceptualization and methodology of population education and the development and evaluation of curriculum materials.

The Program maintains a library of 25 population films available without charge to educators in Tallahassee. For a reference to its curriculum materials, Population Dynamics in Eighth Grade American History, see page 12.

Harvard University, Center for Studies in Education and Development. School of Public Health and the Graduate School of Education and Department of Population Science, Cambridge, Mass., 02138, David Kline, professor of education (617) 495-3551. The Center is involved in training (at the M.A. and Ed D levels), research, and teaching in educational planning, research, and evaluation. The focus is on population education and the development of secondary school curriculum materials in population, health and nutrition, literacy, and economics on nonformal as well as formal levels.

University of Hawaii, East-West Center, 1777 East-West Road, Honolulu, Hawaii 96822, John Middleton, Population Education Project coordinator (808) 948-7243. The Center carries on two programs. The Population Institute is involved in training, research, and teaching in population studies. Bibliographic and reference services are available to libraries, organizations, and individuals with a particular focus on population and family planning information in Asia and the Pacific. The Communication Center focuses on information, education, and communication in population and family planning. This Center has developed materials in population education for midcareer use.

The monthly Asian Pacific Census Newsletter (free), prepared by the Communication Center, reports on population studies, censuses, developments, and conferences. The quarterly IEC Newsletter (free) prepared by the Communications Institute, reports on projects, research, and publications related to the information, education, and communication aspects of population and family planning programs. The IEC Materials Service supplements the IEC Newsletter by listing new publications in the field.

University of Illinois, Population Dynamics Group, 57 Coordinated Science Laboratory, Urbana, Ill., 61801. Paul Handler, director (217) 333-3827. The Group provides computer-generated simulations and graphics in the fields of population, food, energy, labor force, migration, economic development, population history, and contraception for over 125 countries. The system is available for connection to most computers.

Hard-copy printouts and 35-mm slides are available for all simulations and graphics.

University of Michigan, Department of Population Planning, School of Public Health, Ann Arbor, Mich. 48104, Professor Eugene Weiss (313) 763-4344. The department is involved in training (at the M.P.H. level), research, and teaching in population planning with some coursework in population education. The department maintains a library of films on family planning and sexuality for distribution in Michigan.

University of North Carolina, Center for Population and Environmental Education, University Square, Chapel Hill, N.C. 27514, Ralph Wileman, professor of education (919) 933-3731. The Center is involved in education training with emphasis on the development of curriculum materials in population. A library of 15 population films is available without charge to educators and community organizations in North Carolina from the Instructional Materials Center.
Sources

St. Lawrence University, Department of Sociology, Canton, N.Y. 13616, Parker Marden, professor of sociology (315) 379-6476 Activities in population education include developing curriculum materials, primarily for the college level, conducting summer institutes to train college teachers (1971, 1972, 1974) and workshops to produce curriculum materials (1972, 1974), and evaluating materials (both written and audiovisual). Professor Marden is editor of the newsletter Teaching Notes on Population.

Utah State University, Population Research Laboratory, Department of Sociology, Logan, Utah 84321, Dr. Yun Kim, director (801) 752-4100, extension 7662 The Laboratory conducted summer institutes in population studies and education in 1969, 1970, 1971, 1974, and 1975.

Teacher Resources

Background/Theory


Conceptual scheme developed around the theme. Man is a part of a natural system, the earth, and is ultimately subject to the limits of the system. The framework provides a basis for K-12 multidisciplinary studies. Adaptable in whole or in part, the scheme may be infused into existing school curricula with minimal interruption or may be used as a means for organizing discrete concentrated units of instruction.


Provides a theoretical basis for both content of and approach to population education as part of school curricula in the United States. A section on sources for population education includes comprehensive annotations of written and audiovisual materials.


Traces the historical development of the field, with the principal rationale for formal development of population education programs, the theoretical and philosophical debates that have punctuated the process, and the problems encountered by administrators and teachers in introducing the topic into the classroom.


Deals with definitions and concepts in population education and describes different approaches according to regional needs. Includes an annotated bibliography of curriculum development and programs. Materials are separated by world region and cover developments in the United States over the past 2 years and for the rest of the world over the past 4 years.

Focuses on the need for structure in population education and on questions of definition and content. Includes a discussion of population phenomena, a conceptual framework of goals, generalizations, and behavioral objectives, suggestions for planning and teaching courses, and a list of teacher and student resources.

The Development Puzzle, by Nance Lui Fyson, January 1972 Voluntary Committee on Overseas Aid and Development, 69 Victoria Street, London S W 1, England. 60 pp. $1.35 plus shipping (grades 10-adult)

Sourcebook for teaching about the rich world-poor world gap and efforts toward one-world development, written from a British point of view. Units on food and agriculture, health, population growth, trade, industrialization, aid, education, and attitudes and values provide basic information on aspects of development.


Sourcebook on population variables in relation to various physical and natural pressures. Materials include concept statements, discussions, activity suggestions, reference, and audio-visual recommendations. Concepts are developed at junior and senior high school levels for infusion into courses in contemporary issues, family life, history, social studies, and science.


Sourcebook on the role of development education, with essays and teaching suggestions on topics such as jobs, population, and economic development. The appendix includes a guide to films and organizations and a materials list.


Model curriculum on varying global perspectives and the historical development of global interdependence, suggestions for exercises to compare geographic areas, and an annotated list of resource materials.

An Introduction to Population, Environment, and Society, by Lawrence Schafer, 1972 E-P Education Services, 625 Orange Street, No 38, New Haven, Conn. 06511 290 pp., $4.50 (grades 7-12)

A teaching manual with class activities, background information, reprints, annotated film list, bibliography, and a student workbook.


Handbook demonstrating how to work with current and local population data. The local community is interpreted through concepts used by geographers, and population activities are used to explore its size, demographic composition, and population history. Various U S Bureau of the Census materials are suggested for use in classrooms.

Man’s Habitat—The City, by the Minnesota Environmental Sciences Foundation, 1971 National Wildlife Federation, Educational Servicing, 1412-16th Street, N W, Washington, D C 20036 27 pp., $1.50 (grades 4-9)

Teacher’s guide for student investigation into the urban ecosystem. One relationship to be studied is that between population distribution and transportation problems.


A study guide written for teachers and community group leaders to assist them in involving young people in the exploration of U S population issues. Designed to be used independently or in conjunction with the written and film versions of the U S Commission’s report on Population and the American Future (see page 21), the guide contains a condensed discussion from the report, a theme development of “Each of Us A Population Actor,” learning objectives, activities, and references.

Life World 2000. A Guide for Teachers, 1975 Agency for Instructional Television, Box A, Bloomington, Ind 47401 64 pp., $2 (grades 7-12)

Booklet designed to accompany a series of twelve 15-minute population education television programs of the same name. Each program guide includes a discussion for the teacher, learning objectives, suggested activities for before and after viewing the program, and teaching aids connected with the activities. See Life World 2000, page 20.
### Population Education Packet

Packet includes an 8 page pamphlet on "Population and the Sierra Club," a 48 page teacher's manual containing lesson plans and classroom projects, and the World Population Data Sheet of the Population Reference Bureau, Inc.


Twenty-three activities on separate cards focus on a core of population learning objectives and are appropriate for use in science, mathematics, social science, environmental science, and language arts classes. Activities are easily adaptable for upper elementary use.


Teaching guide accompanying two regional population studies: "Recent Trends/Future Prospects: A Look at Upper Midwest Population Changes" and "Population Mobility in the Upper Midwest." These present analyses of the population composition, distribution, migration and mobility, residential patterns, and socioeconomic characteristics for six States. The guide includes objectives, key concepts and questions, and sample activities.


Detailed presentation of population concepts, history of world, United States, and Washington State population growth, the ramifications of growth and factors affecting it. Activity suggestions written by Washington teachers are included.

### Reference Guides


Directory of sources for environmental education assistance by type of organization (federal, local, private) and type of assistance (funding, consultation, materials, personnel, programs).


Resource materials for home economists interested in incorporating family planning and population education into programs, especially for students in developing countries.


Resource packet for use in awareness programs concerned with world and national population issues. Five sections include guides for planning population programs, speaker sources, population bibliography, a list of audiovisual materials, and a list of population organizations and centers. A 3-minute color film loop on world population growth has been prepared for use in the Association's programs.


Pamphlet, designed for Catholic educators, that includes a definition of population education and recommended written and audiovisual materials.

### Newsletters and Periodicals


- Grassroots to global coverage of funds, projects, materials, and trends in environmental education. Each issue includes book reviews, resource listing, articles, and an events calendar.


- "Population Education," edited by Carl Huether and Tracy Johnson, vol. 2, no. 1, January 1974, 49 pp. (grades 5-10). Includes a 24-page section of key questions and answers, pre- and post-test for students, and activity suggestions in population education. Other articles in the issue include an essay by Garrett Hardin, discussions of the definition and politics of population education, and an interview with Baltimore City population educators.

**Energy Growth Alternatives, edited by William D. Ruckelshaus, vol. 2, no. 3, July 1974, 49 pp. (grades 10-adult).** Concerned with the impact of unresolved energy problems on community growth, and shows the need to develop data, plan ahead, and provide options to the public through essays on such topics as present and future prospects, energy and the poor, elderly and working class, city and state activities, and zero energy growth.


Population education newsletter for secondary school teachers and curriculum supervisors, designed to promote understanding of current population trends and issues, provide information on training opportunities and teaching materials, and outline instructional activities useful in the classroom for illustrating population studies in relation to such topics as food, women, nutrition, energy, aging, and immigration.
**Intercom** (quarterly). Center for War/Peace Studies, 218 East 18th Street, New York, N.Y. 10003. $6 per year (grades 9-adult)

- "Development: New Approaches," no 69, 1972, 70 pp., $1.50. Includes a teaching unit on development for grades 10 through 12 as well as an extensive annotated list of materials, including films and organizational resources.

- "Teaching About Population," no 72, 1973, 72 pp., $1.50. Resource guide and program catalyst on population issues that contains a context-setting essay, a series of lesson plans, a list of teaching materials, an annotated list of films, books, and games, and a description of organization activities.

- "Exploration in the Emergent Present," no. 77, 1975, 50 pp., $2.50. Guide to discussion, study, and resources related to the problems and challenges of growth. Interviews with Robert Heilbroner, Herman Kahn, Donald Meadows, and Mihajlo Mesarovic are included as well as five sample lesson plans.

- "Teaching Interdependence Exploring Global Challenges Through Data," no 78, 1975, 34 pp, $1.75. Sections on population, food, energy, environment, military spending, and technology are viewed globally, and the Ocean Resources Game is included.

**Teaching Notes on Population: An Occasional Newsletter For College Teachers**, edited by Parker Marden Foreign Area Materials Center, Edith Ehrman, Manager, 60 East 42nd Street, New York, N.Y. 10017 free (college)

Newsletter containing evaluation of textbooks and other teaching materials including videotapes and games; teaching notes on population, modules; and articles on aspects of the systematic study of population for undergraduate students.


- Vol 6 (fall/winter 1975) contains an article on "Teaching Population Through Science Fiction" with an extensive bibliography of science fiction related to population and the article "Demographic Techniques and Methods in Undergraduate Courses in Population Problems: Are They Necessary?"

**Readings**


Essays on international population and family planning concerns in clothing, nutrition, food supply, economics, decision making, and quality living.


Comprehensive discussion of the issues of population growth in relation to resources and the environment with a policy orientation. Limited presentation of demographic processes, basic measures, and population composition.
Teacher/Student Resources

Curriculum/Study Guides


Four units on population with both student and teacher editions developed by Baltimore city teachers. Much of the material presented is related to life in Baltimore, Md. Each unit is complete with readings, tables, and activities.


Four episodes are related to population "Family Size and Society," 54 pp., 10 copies for $6.30; "Migration Within the United States," 51 pp., 10 copies for $6.50; "Population Change A Case Study of Puerto Rico," 54 pp., 10 copies for $7.20 (instructor's guide $2.22); and "Roles of Modern Women," 66 pp., 10 copies for $6.72.

Each episode is an 8 to 12 day unit for use in sociology, political science, history, and family life courses. Students are expected to work with data in the development and testing of hypotheses, and in the process to become "enlightened skeptics." Each unit includes student resources and an instructor's guide.


Five lesson plans designed to be used alone or in conjunction with other curriculum materials. Activities include taking a family history, looking at early immigration patterns, understanding the experiences of immigrant groups, exploring America's reception of "old" and "new" immigrants, and relating through a case study to the pressures felt by second-generation descendants of immigrants. The package contains a teacher's guide and student workbook.

"Population Dynamics in Eighth Grade American History," by Byron Massialas and Charles Nam, 1975. College of Education, Florida State University, Tallahassee, Fla 32306. 300 pp., single copies on request (grade 8)


Data


Current data on vital statistics, population composition characteristics, social and economic data, and government programs and expenditures presented in readable, tabular, and graphic form. Other useful publications from the Government Printing Office containing Census data are


1975 World Population Data Sheet, Population Reference Bureau, Inc., 1754 N Street, N.W., Washington, D.C. 20036, Wall chart, 35 cents each for single copies, 25 cents each for 2 through 49 copies, 20 cents each for 50 copies or more (grades 9-adult).

This annual publication includes data on population size, birth and death rates, growth rates, doubling time, projections to 2000, infant mortality rates, median age, life expectancy, population under 15 years, dietary supply, and per capita GNP for 150 countries. A copy of "Between the Lines," which offers explanatory notes, is included with each order.

Reference Guides


Sections on policy, education, services, action for high school students, and international population issues offer suggestions on how to express concern about population issues.


Newsletters and Periodicals

Concerned Demography (quarterly), Center for Demography and Ecology, 3224 Social Science Building, University of Wisconsin, Madison, Wisc. 53706 $2 per year (college).

Essays devoted to alternative views on demographic research and training. Editorship rotates among university programs.

ECO News (monthly), Environmental Action Coalition, 235 East 49th Street, New York, N.Y. 10017, 30 cents per issue (grades 4-6).

"People and Our Earth," vol. 2, no. 7, 1972, 6 pp. This issue focuses on the population problems of young people.


Sections on agricultural advances, new foods, and future policy are included.

"Population and Affluence Growing, Pressures on World Food Resources" by Lester Brown, vol. 29, no. 2, 1973, 30 pp. Examines the relationship between population growth and food supply from a number of aspects including technology, ecology, consumption. Prospects for immediate and future alleviation of the pressure on food resources are discussed.

Readings


Collection of 23 articles on the questions: "Does the United States have a population problem? If so, what are the solutions?" The articles reflect different interpretations of the same data as well as different values. The items focus primarily on opposite ends of a spectrum necessitating careful classroom discussion to avoid misconceptions and confusion. Equips students to carry out debates of their own in a course on social problems or contemporary issues.


Commoner's latest book on environment and pollution is highly criticized by Ehrlich and Holdren. A response by Commoner accuses Ehrlich of strong population bias.


A review of the environmental crisis with examples from air, earth, water, and atomic fallout. Commoner ascribes the crisis to the successes of post-World War II technology which — without increasing per capita consumption of food, shelter, clothing, or transportation — replaced natural products with synthetic substances destructive to the environment.

Ecotopia, by Ernest Callenbach, 1975 Banyan Tree Books, c/o Bookpeople, 2940-7th Street, Berkeley, Calif. 94710 167 pp., $2.75 (grades 10-adult)

Fictional scenario describing the state of Ecotopia established in 1980 from northern California, Oregon, and Washington. The novel reviews the decentralized, ecologically sensitive developments in areas such as education, transportation, work, production, sex roles, and population.


Introduction to the study of mankind's relation with the environment. Covers the main elements of the population-food-environmental crisis and stresses need for rapid changes in human attitudes, especially on reproductive behavior, economic growth, technology, the environment, and conflict resolution.


Reprint of the September 1974 issue of Scientific American devoted to population with articles by the most respected authorities in the field of demography on history, physiology of reproduction, genetics, migration, family, women's status, food, the populations of developing and developed nations, and the transfer of technology to underdeveloped countries.

The Limits to Growth, by Donella H. Meadows, et al., 1972, Universe Books, 381 Park Avenue South, New York, N.Y. 10016 207 pp., $2.75 (college and adult)

Examination of the complex and interrelated factors that determine and ultimately limit growth on this planet: population, food and industrial production, pollution, and resource use. (See reference to film The Limits to Growth page 20.)

Models of Doom: A Critique of the Limits to Growth, by H.S.D. Cole et al., 1973, Universe Books, 381 Park Avenue South, New York, N.Y. 10016 244 pp., $2.95 (college and adult)

Presents a critical analysis of the data, methods, and conclusions of the Limits to Growth analysis. Evaluates each of the five basic variables in the model.


Collection of essays by Western social scientists: offers a cross section of opinion on demographic problems of the 1930's and 1970's, on population dynamics of the developed and developing worlds, on the economic and political impact of accelerated population growth on the environment and food production, and minority viewpoints on fertility.
Population and the American Future by
the U.S. Commission on Population Growth
and the American Future. 1972. Superintendent
of Documents. U.S. Government
Printing Office, Washington D.C. 20402
118 pp. $1.75 (grades 10-adult)

The report of the commission's 2-year
study on the economic, social, and environ-
mental implications of population growth in
the United States includes recommendations,
dissenting statements by individual
Commission members, references, and a
list of the more than 100 research papers.

Population Crisis: An Interdisciplinary
Perspective, edited by Sue Titus Reid and
1900 East Lake Avenue. Glenview. Ill.
60025. 211 pp. $2.95 (college).

Thirty-three essays on the population
problem, its control and its impact on man
and his environment. Opposing points of
view are presented.

Population, Evolution and Birth Control:
A Collage of Controversial Ideas, edited by
Garrett Hardin, 1969. W.H. Freeman &
Co. 660 Market Street. San Francisco,
Calif. 94104. 385 pp. $3.50 (grades 10-
adult).

Over 120 short readings related to popu-
lation, ranging from Biblical quotations to
poems to historical pieces to scholarly es-
says. Offers the teacher a selection of opin-
ions which might be useful in provoking
discussion.

"Population Statistics: What Do They
Population Reference Bureau, Inc., 1754 N
10 pp. 50 cents (grades 10-adult).

A primer of population terms and their
meanings and uses. A discussion of U.S.
population trends is included.

ZPG and Immigration: A Discussion
1346 Connecticut Avenue, N.W., Washing-
ton, D.C. 20036. 8 pp. 15 cents each for
1-9 copies, 12 cents each for 10-99 copies
(grades 9-adult).

Pamphlet concerning immigration policy
in the United States. Discusses the demog-
graphic aspects of immigration, laws relat-
ing to immigration, and in four chapters
deals with special problem areas (The Brain
Drain, Illegal Immigration, Refugees, and
The Soldier's Legacy). A short bibliography
is also included.
Data


Leaflets for each of the 50 States, the District of Columbia, and Puerto Rico, each containing a table giving basic statistics, a description of the characteristics of the State's population by race, age, marital status, income, schooling, and employment, and a full-page map of the State showing counties, metropolitan areas, and urban places. Data on housing and agriculture for each State are also included. These portraits were designed for school use and are based on the 1970 Census.


Short well-illustrated reports on the 1970 Census, written for junior and senior-high students. Booklets available are: "We, the Black Americans," "We, the Americans—Our Homes," and "We, the Women." Other subjects in the series are: Spanish-Speaking Americans, American Indians, Youth, Immigrants, Jobs, Elderly, Schooling and Income.

Reference Guides


Booklet dealing with what it means to be a demographer, what the subject matter of demography is (with examples), profiles of three demographers, and information on graduate training in demography in the United States and Canada.

Texts


Discussion in this textbook centers on the problems faced by Earth's inhabitants as population increases and energy sources, food, and land become more scarce. The conversational tone draws the student into a reasoned examination of these critical issues. Illustrated by photographs, graphs, and charts.


Introductory text in demography, defines and outlines the history of population study and the sources of population data. Contains basic, clear discussions of migration, composition, mortality, fertility, and world population growth and its effects. 


Textbook for young people describing worldwide population pressures, primarily in terms of food shortages and health problems. Begins with a chapter explaining basic census methods and demographic variables.

Population, by Robert Lowenherz, 1970. Creative Educational Society, Inc., 123 South Broad Street, Mankato, Minn. 56001. 120 pp. $3.95 (grades 4-7).

Clear, simple, and comprehensive text on the characteristics of population change and why rapid growth presents a variety of social, environmental, and individual problems. Profusely illustrated with photographs and drawings. Information at the end includes sections on definitions of terms, how to read tables, a list of free and inexpensive books and films.


Very comprehensive, well-known textbook. Begins with criteria for population analysis. Determinants of fertility, mortality and morbidity, and migration, projections, age and sex structure, Malthusian theory. Differentiates the population structure of
Readings

Energy 1 through Energy 17, 1974
League of Women Voters, Education Fund, 1730 M Street, N.W., Washington, D.C. 20006, 17 fact sheets for $1 a set, 15 cents each, and $1 for 25 copies of one sheet (grades 10-adult)

Aimed at helping readers think and talk about significant parts of the complex energy issue. Each sheet presents an issue, its background, discussion questions, and references.

The Missing Half: Woman 1975, by the Food and Agriculture Organization, United Nations, 1975, UNIPUB, P.O. Box 433 Murray Hill Station, New York, N.Y. 10016, 50 pp., $2 (grades 10-adult)

A verbal and visual essay on women's status and roles in both the developed and developing world, published specially for International Women's Year. Urges women's full participation in all sectors of their nation's life.


Statement of demographic factors influencing population change, distribution, and growth and a description of the relationship between economic, environmental, and population factors. Gives some attention to policy implications and government programs. Offers a topical bibliography and a listing of involved private organizations as well as public agencies.


Analysis of population problems in the United States and in the world. Traces the historical importance of population dynamics in relation to development issues such as urbanization. Treats the impact of technology on food production, as well as the policy and moral aspects of population size, contraception, and family planning.

Population Growth and the Complex Society, edited by Helen MacGill-Hughes, Sociological Resources for the Social Studies, 1972, Allyn and Bacon, Inc., 470 Atlantic Avenue, Boston, Mass. 02210, 211 pp., $1.68 (grades 10-12)

Adaptations of nineteen articles by demographers and other social scientists on the complex relationship between population size, distribution and composition, and our rapidly changing society. The reader must draw many of the relationships himself, but he is helped with a series of questions for each article.

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Various societal types, following a historical development from primitive to modern societies, including Third World populations and the population of totalitarian societies.


Textbook describing the population explosion and its serious consequences for rich and poor countries alike. Focuses on hunger, poverty, and the worsening state of the environment and calls for new ways of thinking to solve these problems. Includes an explanation of the census and population arithmetic, followed by the history of man's population growth.


Factual text presenting demographic trends without oversimplification, discusses the linkages between population growth and nuclear war, environmental pollution, racism, nationalism, and world poverty.
Audio-Visual Aids and Activities

Charts


Seventy-eight colorful maps and charts prepared for the final 1970 Census reports on “Number of Inhabitants” and “Social and Economic Characteristics.” Data are given by State and county and some maps correspond to the Reference Maps Series GE-50. The 8½-by-11-inch size is designed to be reproduced for classroom use.

Population Poster Packet. 1969 Population Institute, 110 Maryland Avenue, N.E., Washington, D.C. 20002, 6 pieces, $1.50 (grades 4-12)

Cartoons and posters done by students depicting various aspects of population dynamics.


Series containing 12 large, colorful map charts for each of the 65 largest Standard Metropolitan Statistical Areas (SMSA’s) in the United States presents population characteristics, socio-economic data, and housing characteristics.
Films: Short (10 to 20 minutes)

Except as indicated, all films are 16 mm

**Boomsville**, 1969. 11 min., color, $15 rental, $150 purchase Learning Corporation of America, 711 Fifth Avenue, New York, N.Y. 10022 (grades 6-12)

A short animated film produced by the National Film Board of Canada depicting the historical sequences of modern civilization, particularly migration to North America. Puts little emphasis on population growth, but accurately portrays urban growth and its related problems. No narration, appropriate for U.S. history and urban studies courses.


This lively film on two city dwellers in a Latin American city focuses on the frustrations of urban life but faces the fact that the cities are here to stay. Discusses population growth discreetly and urgently, but not in crisis terms, and sees rapid urban migration and natural increase as they intensify current difficulties.

**Eggs**, 1970. 10 min., color, $20 rental, $150 purchase. Film Images, 17 West 60th Street, New York, N.Y. 10023 (grades 7-12).

Animation about human ecological problems and the future of Planet Earth. The Fertility Goddess sows the seeds of life in competition with her partner, Death. Who threatens a future in which licenses are required for reproduction. The Birth and Death forces threaten destruction of the planet but are interrupted by a multi-planet god figure who suggests a future of planning, population control, and love.

**Energy: Can't Do Without It**, 1974, 14 min., color, $12 50 rental, $225 purchase. Encyclopaedia Britannica, Educational Corporation, 1833 Pickwick Avenue, Glenview, Ill. 60025 (grades 7-12).


Companion films emphasize the controlling effect that the production of energy has on American culture, the use and conservation of energy, and the need for developing new safe and practical sources of energy for the future. (grades 7-12)


Tells the story of the U.S. Bureau of the Census from the first census in 1790 to the present. Explains the purpose and methods of the population and housing censuses taken in the United States every 10 years.

**For Your Pleasure**, 1972, 4 min., color, $10 rental, $100 purchase. Mass Media Associates, 211 North Charles Street, Baltimore, Md. 21218 (grades 1-adult).

An animated film depicting the transformation of a rural scene into a crowded, noisy, congested megalopolis.


Depicts urban life in terms of the environmental problems it poses over-crowding, noise, air pollution, lack of privacy, lack of open spaces and recreation facilities, and the hectic and uniform pace of living. Suggests that man can find a solution to these problems in united community planning and action.

**Pandora's Easy Open Pop Top Box**, 1967, 18 min., color, free rental, $55 purchase. Perennial Education, 1825 Willow Road, Northfield, Ill. 60093 (grades 7-12).

Compare the problems of city life and the quietness of the country using flashbacks. Focuses on out-migration from farmlands. No narration.


Gives the facts of population growth in a variety of organisms and shows different animal responses to the same environmental limits, portrays the fluctuation and limitation of population sizes as environment changes, and explains the population growth curve through the history of man. The conclusion is that man, too, must be governed by natural laws.

**Population and the Quality of Life**, 1975, 12 min., color, $20 rental, $90 purchase. Perennial Education, 1825 Willow Road, Northfield, Ill. 60093 (grades 9-12).

Discusses the relation of population and the quality of life. A teaching guide accompanies the film.

**Population and the Quality of Life**, 1975, 12 min., color, $20 rental, $90 purchase. Perennial Education, 1825 Willow Road, Northfield, Ill. 60093 (grades 9-12).

Gives the facts of population growth in a variety of organisms and shows different animal responses to the same environmental limits. Portrays the fluctuation and limitation of population sizes as environment changes, and explains the population growth curve through the history of man. The conclusion is that man, too, must be governed by natural laws.

**Population and the Quality of Life**, 1975, 12 min., color, $20 rental, $90 purchase. Perennial Education, 1825 Willow Road, Northfield, Ill. 60093 (grades 9-12).

Discusses the relation of population and the quality of life. A teaching guide accompanies the film.
Audio-Visual Aids and Activities

Films: Medium (21 to 40 minutes)

Except as indicated, all films are 16 mm

**Beyond Conception**, 1968, 35 min., color, $15 rental, $275 purchase. Population Dynamics, 3829 Aurora Avenue, North, Seattle, Wash 98103 (grades 7-12)

Emphasizes the causes and consequences of population growth for the environment, food supply, and structure of society. Discusses contraception.

**Beyond The Next Harvest**, 1975, 27 min., color, $25 rental, $300 purchase. Mass Media Ministries, Inc., 2116 North Charles Street, Baltimore, Md 21218 (grades 7-12)

Documents the growing world food crisis from a time of surplus, only five years ago, to the present global situation. Visual statements of world hunger. Interviews with 1974 World Food Conference delegates (Lester Brown, Barbara Ward, Jean Mayer, and Sayed Marei) and factual narration by Norman Cousins mesh to show all nations' and peoples' concern for survival.


The experience of a woman undergoing illegal abortion under cruel and unsafe circumstances is contrasted with that of a woman obtaining a medically approved, legal abortion. Tastefully done. Does not consider whether abortions ought to be performed, but rather under what circumstances.

**Issues in Population: Where the Experts Disagree**, 1971, film strip or slide show, 28 min., color, $2 rental, $20 film clip purchase, $45 slide show purchase. Sound track available on 7-inch tape reels recorded at 7½ inches per second or on tape cassettes Cornell Film Library, Roberts Hall, Cornell University, Ithaca, N.Y. 14850 (grades 7-12)

A brief discussion of world population growth followed by differing viewpoints on several issues by experts. Topics include population and food, the environment, and population policies in the United States. The aim is to show that controversies among experts do exist and there are no easy answers.

Joyce at 34, 1972, 38 min., color, $35 rental, $350 purchase. New Day Films, P.O. Box 315, Franklin Lakes, N.J. 07417 (grades 10-adult)

The role of motherhood and the conflicts faced by the working mother are analyzed in this lovely film. Although not a feminist film, it presents the conflicting loyalties and ambitions of three generations of women.


Presents a discussion by six students from Belize, Ghana, India, Indonesia, Malaysia, and the United States. They consider the effects of increasing population in their own countries and throughout the world. Covers a wide range of topics and opinions.

**Life World 2000**, 1974, color. Can be used for broadcast. Each program $125 purchase. Agency for Instructional Television, Box A, Bloomington, Ind 47401 (grades 7-9)

Series of twelve 15-minute television programs on such subjects as optimum population level, population trends, migration, pollution, crowding, metropolitan areas, families and babies, attitudes, population policy, and alternative futures. Accompanied by a teacher's guide (See page 9).

**The Limits to Growth**, 1973, 30 min., color, $10 rental, $200 purchase. Lane Council of Governments, 135 Sixth Avenue East, Eugene, Ore 97401 (grades 10-adult)

Offers a visual version of the concepts and findings also reported in the book The Limits to Growth by Donella Meadows (see page 14). Very clearly explains exponential growth, particularly in relation to the five physical factors (population, agricultural production, natural resources, industrial production, and pollution) which determine and limit growth on earth. Presents the results of various growth assumptions as they relate to each other within the world model.

**Population Problem, Japan, Answer in the Orient**, 1966, 30- and 60-min. versions, color, $9 and $15 rental, $200 and $350 purchase. Indiana University, Audio Visual Center, Bloomington, Ind 47401 (grades 7-12)

Although population change is the primary theme, historical and sociological views of Japan are important focuses. Describes the relationship of population growth to Japan's military conquests and expansion in the past 100 years. Follows modern economic and societal changes.

**Promise City**, 1971, 30 min., color, $11.50 rental. Indiana University, Audio Visual Center, Bloomington, Ind 47401 (grades 7-12)

This study of migration and depopulation shows the slow death of an Iowa farming community, illustrating the small farmer's survival difficulties in the United States today and consequent migration of the young farm population to more prosperous urban areas.

**The Tragedy of the Commons**, 1971, 23 min., color, $35 rental, $295 purchase. King Screen Productions, 320 Aurora Avenue, North, Seattle, Wash 98109 (grades 10-adult)

Emphasizes world population growth, initially through the analogy of an overgrazed common pastureland, then through illustrating the degradation of urban life. Brings attention to the black minority's mistrust of the entire ecology versus population movement and states that population must be controlled.
Films: Long
(41 to 60 minutes)

Except as indicated, all films are 16mm

A Matter of Indifference, 1973, 48 min.,
black and white, $50 rental, $400 purchase
Phoenix Films, 743 Alexander Road,
Princeton, New Jersey, N.J. 08540 (grades 9-adult)

Presents the problems of older Americans through a series of interviews and visual essays. Maggie Kuhn, founder and national leader of the Gray Panthers, and others speak on the process of aging in the United States.

Modern Women, The Uneasy Life, 1967,
two parts, black and white, 60 min., $12
rental, $200 purchase Indiana University,
Audio Visual Center, Bloomington, Ind.
47401 (grades 7-12).

Deals with the changing role of women in modern U.S. society. Focuses on problems faced by women who are familiar with and prefer life outside the home and highlights the value conflict experienced by educated women who attempt to combine a career with the traditional homemaker role. Reveals many of the innermost biases and expectations men have concerning the ideal roles for husband and wife. One section also explores different teaching approaches with young girls and what kinds of behavior the approaches reinforce.

Multiply and Subdue the Earth, 1967,
60 min., color, $18.50 rental, $450 purchase
Indiana University, Audio Visual Center,
Bloomington, Ind. 47401 (grades 10-12).

Emphasizes land as a precious resource and urges ecologically sound use of it. Criticizes economic gain as the basis for land-use planning. Reviews man's evolutionary history and looks at primates in their natural surroundings. Studies primitive populations in Africa and New Guinea to show situations where man interacts with his environment without causing severe imbalances. The main thread is man's reliance on a supportive ecosystem.

To Feed the Hungry, 1969, 45 min., color,
$40 rental. Contemporary/McGraw Hill
Films, 330 West 42nd Street, New York,
N.Y. 10036 (grades 8-adult)

Discusses hidden hunger in the United States and deals with the effects of hunger on the family from the father (who must work) to the mother (her health) and the children (their performance in school). Interviews with political leaders, city officials, and the poor reveal the complexity of the problem.

Tomorrow's World: Feeding the Billions,
1968, 54 min., color, $35 rental, $600 purchase
Rental. McGraw Hill, Film Preview
Library, Princeton Road, Highstown, N.J.
08520. Purchase Contemporary Films/
McGraw Hill, 330 West 42nd Street,
New York, N.Y. 10036 (grades 10-12).

Narrated by Frank McGee. Opens with a
clear portrayal of the history of population growth and the gravity of present growth trends in terms of widespread food shortages. Focuses at length on the various ways man is devising to farm the tropics, deserts, and oceans.

Games

Balderc John Knox Press, Box 1175,
Richmond, Va. 23209 $25 (grades 10-12).

Simulation game on feeding the world's people, designed to help participants gain understanding of the world's economic interdependence and the problems of food production, population growth, inflation, mechanization, and distribution of world resources in a period of 1 1/2 to 3 hours, of each of the 10 to 20 participants acts as food coordinator for 150 million people, making them alive by earning BALanced Diet CERTificates.

Eco: An Island Simulation Game, by Anita
Yoder and John Landahl, 1975 Dolphin Enter-
tprises, 2435 North Northlake Way, Seat-
tle, Wash 98103 $1 for a single copy, 85
cents each for 2 to 15 copies, 75 cents each for
15 to 50 copies, 71 cents each for 50 to
300 copies (grades 4-12).

Designed to give teachers and their stu-
dents experience manipulating human and
animal populations in a closed ecosystem
where the consequences of their choices
be felt. Several activities are outlined using
skills in language, mathematics, and social
science, and sample materials are
to include. The open format allows the game
to be adapted to students' needs and abilities.

Explosion, by Dan Guida, Roger Henke,
and Dennis Porter. INTERACT, P.O. Box
622, Lakeside, Calif. 92040. $20 for 35 stu-
dent guides and one teacher's guide
(grades 10-12).

Simulation designed to involve students
in some effects of various population-
related issues on a society. Phase I deals
with the societal pressures of population
growth; Phase II with resources, consump-
tion, and the environment, and Phase III
with governmental decision-making on
population problems. Deals with the effect
of overpopulation.

Global Futures Game, Earthline, P.O. Box
120, Annex Station, Providence, R.I. 02910
$5 (grades 10-adult).

Dynamic simulation of present and future
world conditions in terms of population,
food, technology, and education and the
relative growth rates of each Groups of
players representing eight socio-economic
regions barter for resources in 5-year
wounds toward the year 2020. The game can
be played by 3 to 48 players in a period of 2
to 3 hours.
Audio-Visual
Aids and
Activities


Explores the interrelationships among world population, land mass, food supply, and resources. Appropriate for 25 to 100 participants in a large room, the basic game introduces the concept of a finite world where there are finite resources unequally distributed among many peoples. Supplemented by a reference section giving statistics and short summaries of population in Africa, Asia, Latin America, and the industrialized nations. Final section contains eleven "optional activities" which are keyed to the play of the game but could easily be used separately.


Simulation designed to enable the player to guide a nation through a predetermined development process on the hypothetical planet Celestra by procuring agricultural, industrial, medical, and educational units to support the growing population and to avoid a population explosion. Played by two to six persons.

Starpower, 1973 Simile II, P.O. Box 1023, La Jolla, Calif. 92037. $3 for directions for making one's own game, $25 a kit for 18 to 25 students (grades 10-adult).

Deals with the unequal distribution of the world's resources. Individual players have the chance to progress from one economic level to another by acquiring wealth through trade. Appropriate for a session of 1 to 2 hours.

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World Population Growth

Growth Through Time, 8000 B.C. to 2000 A.D.

Growth by Region, 1975 to 2000 A.D.
World Population Growth

POP QUIZ???

1. What is the world's population in 1975?
2. When did the world's population reach 1 billion?
3. What is the current world growth rate?
4. At the current growth rate, how many people are added to the world's population every day?
5. In how many years would the population double if it were growing at 2 percent?

In 1975 the world's population grew to over 4 billion (4,000 million) people. It took about one million years for man's numbers to reach the first billion in 1850; and another 75 years to double to 2 billion; and only 50 years to double again reaching 4 billion in 1975. At the current rate of growth of 1.9 percent, the population will again double in less than 40 years. This rapid increase has been relatively recent in terms of man's history on earth.

Population growth increases exponentially or by multiplying. A familiar story, said to have originated in Persia, offers a classic example of exponential growth. The story tells of a clever courtier who presented a beautiful chess set to his king and in return asked only that the king give one grain of rice for the first square on the chess board, two grains or double the amount for the second square, four (doubling again) for the third, and so forth. The king, not being mathematically inclined, agreed and ordered the rice brought forth. The eighth square required 128 grains, and the twelfth took more than one pound. Long before reaching the 64th square, the king's coffers were depleted. Even today the world's richest king could not produce enough rice to fill the final square. It would require more than 200 billion tons or the equivalent of the total world production of rice for 653 years.1

For individual countries the differences are even larger. For example, Mexico experienced a growth rate of 3.2 percent annually between 1970 and 1975, while Austria and Finland grew only 0.2 percent a year.

The size of the population of various world regions in the year 2000 is based upon UN projections. Projections are simple statements about the size of the population at some future date if certain birth, death, and immigration trends continue. They are not predictions of future population size.

The chart on world population growth by region illustrates clearly differences in the present size and the future growth of various regions. The 1970-75 average growth rates by region vary from a high of 2.7 for Latin America to a low of 0.6 for Europe.

1970-75 Average Annual Growth Rates For World Regions

<table>
<thead>
<tr>
<th>Region</th>
<th>Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>2.6</td>
</tr>
<tr>
<td>Asia</td>
<td>2.1</td>
</tr>
<tr>
<td>North America</td>
<td>0.9</td>
</tr>
<tr>
<td>Latin America</td>
<td>2.7</td>
</tr>
<tr>
<td>Europe</td>
<td>0.6</td>
</tr>
<tr>
<td>USSR</td>
<td>1.0</td>
</tr>
<tr>
<td>Oceania</td>
<td>2.0</td>
</tr>
<tr>
<td>World</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Source of data: 1975 World Population Data Sheet.

If a human population grows at one percent a year, it takes only 70 years to double since the amount added each year becomes part of the total population which then increases by another one percent in the following year. The number of years needed to double the original population size, depending on the rate of growth, is called doubling time. (See above)

As long ago as 1798, an early speculator on the causes of population growth, Thomas Malthus, recognized that populations increase at an exponential rate of growth. Malthus felt that the ultimate check on world population growth would be the lack of food. He claimed that food production would increase at an arithmetic rate which means growth by a constant rather than an increasing amount. Of course Malthus' scheme did not take account of the impact of modern technology on agricultural production.

The current growth rate of 1.9 percent may not seem high in itself, but when it is applied to the world's large population, it represents an increase of 204,932 people per day. At this rate, in only three years the world's population grows by the size of the United States' population!

The chart on world population growth by region illustrates clearly differences in the present size and the future growth of various regions. The 1970-75 average growth rates by region vary from a high of 2.7 for Latin America to a low of 0.6 for Europe.

The differences in the expected increases in various regions are striking. Europe's population is projected to increase by 14 percent, while Africa's will more than double. The populations of North America, Europe, and USSR will grow by only 19 percent in contrast to a 70 percent increase in Africa, Asia, Latin America, and Oceania. The distribution of the population by region will also change due to the different rates of growth. Today, for example, 76 percent of the world's people live in the developing countries and by the year 2000, 82 percent will.

1 From The Limits to Growth film script.
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