



## **Human Ecology: How it Relates to Population**

Curriculum Unit 80.05.07  
by Sherree L. Kassuba

### **Introduction**

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There are three basic objectives for this unit of study. They are: (1) to introduce to the students the subject of population, (2) to make the students aware of the problems overpopulation and population control can have on a nation, (3) to help develop an understanding of women's role in population. This will be a four week unit taught to the 9th grade with a reading level from the 3rd to the 6th grade. In teaching this unit I will use the following resources; slides, movies, guest speakers, graphs and charts. This unit can also be incorporated into classes such as mathematics, U.S. History, sociology, ecology, health or environmental studies. An outline of the unit is as follows:

- I. Birth Rates and Death Rates
- II. Fertility Rates
- III. Marriage and Childbearing
  - A. Women's Roles
  - B. Birth Control
- IV. Age Structure
- V. Population Control
  - A. 1974 Year of World Populations
  - B. Census
  - C. Changing Attitudes
  - D. Education
  - E. Voluntary Control
  - F. Involuntary Control

## ***I. Birth Rates and Death Rates***

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The human population is forever growing and growing. “It took millions of years to get the first billion humans on earth by 1850. Then it took 80 years to add another billion by 1930, and only 30 years more to add a third billion by 1961. But it took only 16 years to add the fourth billion by 1976. We may add the next billion in the 14 years between 1976 and 1990. One billion is about the number of people in China and Russia today or four times the present population of the United States.” <sup>1</sup> That is a lot of people in such a short amount of time. We have to remember that those numbers that just kept multiplying are not just from birth alone, but from the decline in older people dying. People are living for longer periods of time because of better food, housing, and medical improvements. The death rate among children was once much higher than it is today. Science and medicine have reduced the death rate by controlling diseases and epidemics. Vaccinations, antibiotics, and insecticides are used throughout the world to prevent and cure diseases. There are more and more children living until they are old enough to reproduce. As more people reproduce, more children are born and population size keeps increasing.

How do people find out all these numbers? Population specialists or people known as demographers do the work. They use the crude birth rate and crude death rate to determine population size. How they find out the numbers is by taking the numbers of births or deaths per 1000 persons in the population at the mid-year of any given year. Then the demographers divide the total number of births or deaths per year by the total population at midyear and multiply the results by 1,000. Here are two good examples of the birth and death rates.

### *“Average U.S. Population Growth in 1977*

9,078 babies were born each day  
5,200 persons died each day  
3,878 people were added each day  
+ 1,100 legal immigrants  
4,978 new Americans each day, or 34,845 per week

or

18 million per year (without counting illegal immigration of about 1 million per year)” <sup>2</sup>

### *“Average World Population Growth in 1978*

334,000 babies born each day  
140,000 people died each day  
194,000 people were added each day

or

1.4 million people per week

or

71 million people per year” <sup>3</sup>

They are called “crude” simply because they do not allow for differences in the structure of populations. They are the most readily available figures, and although they are often quite useful, comparison of crude rates may be misleading. An example of this was in the late 60’s when there was the highly publicized drop in the birth rate in the United States, which some people and publications misinterpreted as heralding the end of the

U.S. population explosion. This could, of course, have been caused by a decrease in the number of women in the childbearing years rather than by a change in the desired family size of individual women.

Many other factors influence birth rates in addition to the number of women in their childbearing years. Severe economic conditions, epidemics, and wars may cause declines. The growth of the women's liberation movement in the United States since 1965 may well have become an important influence on birth rates. Young women are expressing more interest in careers and equal opportunities and less interest in being a homemaker than they did in earlier years. Many women are very honest about their personal lack of interest in having children, an attitude which would have been virtually unthinkable 15 to 20 years ago.

Concerning death rates, most human populations show rather high age-specific death rates in the age from birth up to one year and considerably lower rates in the next nine years. Infants are more likely to die than children. After the age of ten there is generally a slow rise in death rates until around 45 or 50, and then a rapid rise. Sometimes the students really can't comprehend how many people there really are on the planet, or how much a million or billion people really are. "But let us just say the class decided to take one second out to say "hello" to each additional person added during one year. If the class worked around the clock we would need 2 1/2 years to say hello to them and during that time of greeting 178 million more persons would have arrived on this earth, putting the class back 6 1/2 years saying all those "hellos".<sup>4</sup>

## ***II Fertility Rates***

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Experts have a very hard time estimating or judging exactly how the population will grow and when. It isn't because their figures are that far off; it is mainly because of people. Humans are not very predictable when it comes to having children. Experts missed the postwar baby boom in the United States because they could not predict how people would act. When people want to have children they do, no matter what the outside influences are. The trend for the past decade has been much more of how couples perceive their own welfare rather than to any social stigma or religious affiliation.

Population experts use fertility rates to determine population size. A fertility rate is the number of live births per 1,000 women in the reproductive age group (15 to 44 in the United States and up to 49 years in many other countries). For further projections demographers use the total fertility rate, which is a projection of the average number of children a woman will have during her entire reproductive period. The crude birth rate reached a record low in 1968 because a smaller proportion of the total population were women in the 15-44 age group in the late 1960's than in 1936. In 1936, 24% of the population consisted of women in those childbearing years; in 1967, only 20%. In 1967 there were an estimated 40.2 million women in the 15-40 age class. By 1970 the U.S. Census Bureau estimated that there were about 42.3 million women in this class. In 1975 the number of women of childbearing age was projected to be about 46.9 million, an increase of 17% over 1967. And we will have to wait and see what the 1980's census has to say about the percentage of women in the childbearing years. Do you think it will be a lot higher than in 1975?

### ***III Marriage and Childbearing***

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People are being married at a much later age than generations before them, and consequentially having less children at an older age. According to the U.S. Bureau of Census, 43% of American women in their 20's were still single in 1976, compared with 28% in 1960. Society is not pressuring women into marriage as it used to.

Attitudes have changed for many women concerning their traditional female roles, which were wife, mother and homemaker. Women are not having as many children as their grandmothers or great-grandmothers did. Today's women are getting married later, practicing a safe and reliable form of birth control and planning when they want to have children. Generations ago, a large family helped around the house, in the fields, or with the family business. It was a symbol to have a large family, especially to the head of the household. It showed he was a provider, and usually a devoted follower of his religion. Also families were larger because there was a higher mortality rate.

As these children from very large families grew up they wanted to give their children material items. So one of the values which helped to establish the small family idea in the United States was the middle class emphasis on offering the child as many advantages as the family could reasonably afford. Today the emphasis has shifted from the quantity to the quality of a home environment. People still want to give their children material advantages but the quality of how it is given has changed.

Economic factors have a lot to do with the number of children a husband and wife have. Food, housing, gasoline, heating fuel, entertainment, everything has had a rise in prices and some people just can't afford to live if another child was added to the household budget. Some day or even now, there may not always be enough for just one more child to a family.

Women now have the freedom to choose whether to be a full time mother if she wants to be or to split her life between family and a career. Women are no longer bucking the disapproval from husband, family or society when they join or rejoin the labor force.

A lot of women are not having children because of the high rates of divorces, or people living together and postponing marriage and children all together. One out of every two marriages ends in divorce, statistics now state. Lower U.S. fertility rates could also be related to the increase in divorces, which has doubled between 1960 and 1976. Sometimes with a couple, divorce may even come before they have begun to have a family or have had only one child. Also the number of unmarried couples living together has doubled between 1970 and 1976.

On the other hand, with some women, motherhood holds a nicer side than it did in the late 60's and early 70's. Women are planning their pregnancies more and anticipating their newborn baby's arrival with a new desire for motherhood. Gone are the days when motherhood was always under attack. Motherhood isn't looked at as a crime against women or even society, it is becoming an important role again for women, but not the only role.

## IV Birth Control

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One of the most important social determinates of fertility is birth control. The modern family planning movement began in the United States and England as an outgrowth of the women's rights campaign. In the beginning it was intended primarily to relieve women of the burdens of too many children, which was also a threat to the mothers' lives. In the earlier years of their endeavor, men generally opposed the idea or were indifferent to it. When men became aware of the fact that motherhood of too many children threatens a woman's life, men began to support family planning, and the medical profession developed more modern and effective methods of birth control. Nevertheless, the wife still holds the primary responsibility for birth control in the family. This is reflected by the fact that the majority of modern birth control methods are designed to be employed by the woman.

Here are brief descriptions of six conventional methods of birth control endorsed by the Planned Parenthood Federation.

1. " *The pill* " is a monthly series of birth control pills. The ingredients are similar to hormones normally produced in a woman's body. Birth control pills keep the ovaries from releasing eggs. They do this only if they are taken a full monthly series on time. If one or more pills are forgotten, there is a chance of pregnancy, Of 100 women on the pill about 2 may become pregnant during a year of actual use. Women who never forget the pill have less chance of getting pregnant. It's the most reliable method and convenient to use. Periods are usually more regular, with less cramps and less blood loss. There's less iron deficiency anemia, less acne among users. It offers protection from non-cancerous breast tumors and ovarian cysts.
2. *The intrauterine device or IUD* is a small device of plastic. A clinician or doctor inserts the right type in a woman's uterus. Some IUD's can be left indefinitely, other types must be renewed periodically. An IUD acts to change the lining of the uterus in some way so that it hinders a pregnancy from happening. Of 100 women with IUD's, about 4 may become pregnant during a year of actual use. A woman's protection is increased if she checks her IUD placement regularly, or if the couple also uses foam or condom for a week about midway between periods. With an IUD in place, a woman does not need to think about using her birth control method every day or every time she has sex.
3. A *diaphragm* is a soft rubber cup with a flexible rim around the edge. It is used with contraceptive cream or jelly. It is inserted in a woman's vagina before intercourse. The diaphragm covers the entrance to the uterus, and the cream or jelly halts sperm movement. Of 100 women using diaphragms, about 13 may become pregnant during a year of actual use. You may increase protection by checking that it covers the cervix every time there is intercourse. Once it is learned, insertion is easy. Properly placed it is not felt by either the woman or the man.
4. *The condom* is a sheath of thin rubber or animal tissue. It is put on a man's erect penis before intercourse. A condom collects a man's semen and keeps sperm from entering a woman's vagina. Of 100 couples relying on condoms, about 10 pregnancies may occur during a year of use. When the woman uses foam at the same time, greater protection is possible. Condoms help protect against sexually transmitted diseases.
5. *Vaginal contraceptives* are foams, creams, jellies or suppositories that are chemical substances inserted before intercourse that stop sperm but don't harm vaginal tissues. One of these is inserted in a woman's vagina before intercourse. It spreads over the entrance to the uterus. It

blocks sperm from entering the uterus, and the chemical halts sperm movement. Of 100 women using a vaginal contraceptive, about 15 may become pregnant during a year of use. When the man uses a condom at the same time, greater protection is possible. Easy to buy in drug stores and easy to use. And it may offer some protection against certain sexually transmitted diseases.

6. *Periodic abstinence or the rhythm method* is based on the ovulation cycle. Several ways of checking a woman's changing bodily signs are designed to help her discover the days each month when an egg is likely to be released. Knowing the several days before, during and right after an egg is released lets a woman avoid intercourse during her peak fertility, to prevent sperm from meeting the egg. Among 100 women limiting intercourse by these methods, about 19 may become pregnant over a year of use. Keeping careful records can give better results. No medication and little equipment is needed. Calendars, thermometers and charts are easy to get. These methods are acceptable to all religious groups.

Sterilization is the permanent method of contraception and the most effective means of controlling one's fertility. Sterilization is suited only for those men and women who have decided they never want to cause conception or become pregnant. Choosing to get sterilized is a big decision. For either a man or a woman making this decision, which goes against many of our society's norms, it helps to talk with other people who have been sterilized.

In the traditional sterilization operation for a woman, tubal ligation, the woman is put to sleep with a general anesthesia, a fairly large abdominal incision is made, a piece of each fallopian tube is cut out, and the two ends are tied off and folded back into the surrounding tissue. A more recent development is the laparoscopy technique, in which a tube with mirrors and lights is inserted through a small incision in the woman's abdomen, and the tubes are visually located and then cauterized (burned) with a small instrument entered through another incision.

Sterilization for the man is called a vasectomy. The operation takes about half an hour. The doctor applies a local anesthetic, locates the two vas deferens (tubes that carry sperm from testes to penis), removes a piece of each, and ties off the ends.

A lack of adequate sex education including birth control is still a serious problem in the United States. We face both a population problem and a venereal disease epidemic, and yet powerful groups in our country are determined to keep the "facts of life" from our young people. No subject is more likely to bring out a mob of angry parents than the thought of introducing the most simple sex education curriculum into a school, even if the program is endorsed by educators, psychiatrists, and clerics of all faiths.

To have a good sex education program there are a few barriers that have to be broken down. One is a lack of training for teachers who need to understand the subject thoroughly. The other is to drop the feeling that sex education must be tied up with a series of moral judgments. It is difficult to construct an argument against three basic aspects of sex education in the schools. First, children must be thoroughly informed about the

anatomy of sex organs the the physiology of sex and reproduction. Second, they must be taught the difference between 'sex' and reproduction and about the methods of contraception. Third, they should be informed of the dangers of venereal diseases. Something has to be done about a positive working sex education program in the schools, because when these children mature to the childbearing years, they should have the knowledge of good family planning.

## ***V. Age Structure***

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The age structure or age distribution has a lot to do with the population. The more there are people within the bracket of the reproductive years, the more children will be produced. But even though the number of children people are having is greatly lowered, between the 80's and 90's the number of women having babies will rise rapidly because there will be more women in their reproductive years.

"Between 1947 and 1957 about 43 million children were born, a fifth of the present United States population. This means that the overloaded classrooms of the 50's and the 60's have been replaced in the 70's by high unemployment rates for teenagers and adults under 25, as large numbers of baby boom adults flood the job market. Almost half of all currently unemployed people in the U.S. in 1977 were between 20 and 25. This situation won't begin to ease until after 1982, when the last of the baby boom adults turn 25."5

By looking at age structure, population experts can predict what the population will be like especially between now and 1990. If the 60's and early 70's have been the generation of youth, then the period from 1975 to 1995 should be the era of young adults. Then between 2000 and 2030, the United States will have the largest number of older people in its history (assuming that the death rates do not rise).

The burden of caring for so many older people will fall on the smaller groups of babies born in the late 70's and 80's. But if there are so many older people from 2000 to 2030 maybe some big changes will begin to happen in the country, such as: the crime rates may go down since the number of people between their teens to 25 will not be as high as before, there may be more job opportunities for young people since more people will be retired from their jobs, unemployment should ease up with fewer workers entering the job market, and more women will be moving into the work force which should help keep fertility rates low with these things happening they will bring new change to society for the better.

## ***VI Population Control***

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Some people are blind to the fact that there is a limit to how many people can exist on this earth. Their knowledge of how population is supposed to be controlled by disease, famine and war is very limited. They only know about how clever individuals have postponed the mechanics that would control our population. Some people have just recently become aware of our limits to our natural resources and environmental problems.

In 1974 the General Assembly passed a resolution designating that year as World Population Year. The act was seen as a culmination to a long process of concern and as the precursor of a new and vast commitment by the nations and people of the world to the principle of population planning. World Population Year had five



main objectives:.

1. To improve knowledge of and information on the facts concerning population trends and prospects in both developed and developing countries.
2. To sharpen awareness and to heighten appreciation of population problems and their implications by individual governments, by nongovernmental organizations and by scientific institutions.
3. To promote effective education on population, family life and reproductive functions through formal and other educational systems.
4. To promote the consideration of demographic factors in development planning and the development of policies and programs in population fields which individual governments might wish to undertake.
5. To expand the international co-operation in population fields and to increase the supply of suitable technical assistance to countries which desire it, and in accordance with their needs.

The highlight of the year was the World Population Conference which brought together government leaders and international specialists to study and exchange views on population issues and to examine a draft World Population Plan of Action being formulated by the Secretary General with the assistance of an Advisory Committee of Experts on Global Population Strategy. The goals of World Population Year were countries in which rapid population growth is now occurring should consider seeking to reduce their rates of natural increase to less than 1.5% a year over the next two decades. And relatively low fertility countries that are already growing more slowly than this should seek to approach more closely a stationary population level over the next 20 years.

Here in this country we just finished the 1980 census. A census is taken every ten years and is made by the government. The census is the population of a strictly defined territory and it includes every person in that area without omission or duplication. Censuses furnish not only information about the population at a given time but, in combination, no less significant data about its development over a period. Censuses are typically restricted to factual questions to which there is a single truthful reply. The 1980 census will not be available to the public until January 1981, but some city counts are being written up in newspapers. According to the census count for New Haven, its current population is around 116,000. Ten years ago, the city's population was 137,000. The new figures came as a rude shock, a 15.4% decline. What has been happening? For one thing, the population per household has been declining in recent years because of different life styles, more senior citizens, fewer children and high divorce rates.

The single most important factor in a country's reproductive rate is the motivation of the people toward the regulation of family size. The desire for a small family is critical. If a couple is determined not to have more than two children, they usually will not, regardless of whether there is a birth control clinic down the street. If the motivation is weak, the practice of birth control is likely to be a sometime thing, although the motivation often grows with the number of children in the family.



A great many socioeconomic factors affect the reproductive goals of individuals and of a society. Among these are the general education level, the degree of urbanization, the social status of women, the opportunities open to women for employment outside the home and educating each child. The higher or greater each of these factors is the lower fertility generally will be. Other factors, such as the average age at marriage, especially of women, the degree of tolerance for illegitimate births or the usual length of breast feeding also can directly affect the fertility rates. No form of population control, even the most coercive or repressive, will succeed for long unless individuals understand the need for it and accept the idea that humanity must limit its numbers. The ultimate key to population control lies in changing human attitudes concerning reproductive behavior and goals in all societies.

The word education conjures visions of structured learning environments, textbooks, teachers, desks, research, etc. However, much education is the result of simple observation and everyday living experience. We must realize that education is not shaped only by the school, but also by the family, business, churches, government and especially friends. An important role of education is that it should be exciting. One general approach to educating the people is to show how population issues are related to almost every facet of our lives; where we live, the size of our families, the zoning of our communities. Population is woven into our whole life, it does not stand alone.

In late 1968, a new organization was founded, Zero Population Growth. The public response to the organization has been quite enthusiastic and also has a wide appeal to professional demographers and other groups within the scientific community. The goals are reduction of fertility to the replacement level and ultimate zero growth and population stabilization. It hopes to achieve these goals by (1) educating the public to the dangers of uncontrolled population growth and its relation to resources, environmental and social problems; and (2) by lobbying and taking other political action to encourage the development of antinatalist policies in government. In 1971 ZPG had over 40,000 members in 400 chapters in the United States and sister organizations had been established in Australia and Canada.

Population control is the conscious regulation of population size by society. Given the threat to our environment and the menace this represents to our already faltering ability to provide food enough for today's population, it is clear that the human population cannot afford any further growth and will soon have to decline. No nation has yet adopted as a goal the reduction of its population growth rate to zero.

Bernard Berelson of the Population Council has analyzed and rated several proposed population control measures according to these criteria: technological, political, administrative and economic feasibility; ethical acceptability and presumed effectiveness. Most proposals that might be expected to be effective were rated relatively unacceptable on one basis or another. Among proposed general approaches to population control are family planning, the use of socioeconomic pressures and compulsory fertility control. Maximum freedom of choice is provided by traditional family planning, which allows each couple to plan the number and spacing of their children. But family planning alone should not be regarded as "population control" because it includes no consideration of optimum population size for the society, nor does it influence parental goals. The use of abortion and voluntary sterilization to supplement other forms of birth control can quite properly be included as part of family planning. These methods can be made available at costs everyone can afford. An extension of family planning that would include legal abortion and sterilization wherever acceptable, might be the first step toward population control. Family planning programs can provide the means of contraception and through their activities and educational campaigns can spread awareness of the idea of birth control among the people.

Population control through the use of socioeconomic pressures to encourage or discourage reproduction is the approach advocated by many. The objective of this approach would be to influence the attitudes and motivations of individual couples. An important part of such an approach would be a large-scale educational program to persuade people of the advantages of small families, to themselves and to society. Information on birth control, of course, should accompany such educational efforts. As U.S. taxpayers know, the federal government uses economic pressure in its present income tax laws to encourage marriage and childbearing. Tax laws should be adjusted to favor, instead of penalize single people, working wives and small families. Perhaps they should even penalize large families that have incomes above certain levels. Tax measures in the U.S. and other countries might also include marriage fees, taxes on luxury baby goods and toys.

A somewhat different approach might be to provide incentives for late marriage and childlessness. Possibilities include paying a bonus to a first time bride over 25 years old, a bonus could also be given to couples after five childless years or to men who accept vasectomies after their wives have a given number of children. Adoption can be encouraged through subsidies and simplified procedures, particularly, as a measure to satisfy couples who have a definite desire for a child.

Social pressures on both men and women to marry and have children must be removed. If society were convinced of the need for low birth rates, no doubt the stigma that has customarily been assigned to singles and childless couples would soon disappear.

Compulsory control of family size is an unpleasant idea to many, but the alternatives may be much worse. Some governments practice involuntary population control, these usually being the poorer, less educated, overpopulated countries. Most times these countries use vasectomies on all fathers of three or more children, or a program of sterilizing women after their second or third child. They don't educate their people about contraceptives or family planning because it is easier, they say, to sterilize the people than to educate them and sometimes there is an automatic limit put on the number of children allowed per family. Even sometimes there are economic sanctions put on couples if the number of children is over the nation's limit.

There are many people proposing possibilities for coercive control of population. Some of the developments are: the development of a sterilizing capsule that can be implanted under the skin and removed when pregnancy is desired, issue each woman at marriage a marketable license that would entitle her to a given number of children, adding a sterilant to drinking water or staple foods, a sterilizing virus could be developed with an antidote available by injection. Some of these forms of sterilization seem inhuman and discriminate against particular groups, but if something isn't done in some nations about overpopulation, these forms might have to go into action. And I think most people really wouldn't want these actions developed for the overpopulated countries of the world, when education is all these people really need.

## **Activities**

### 1. Population Studies Week

Organize a week during the unit or right after the unit to raise the general consciousness of your class, the student body or maybe even the community on the implications of overpopulation. I would use the multimedia and seminar approach which would include seminars, speakers, films, slides and posters. Groups that may come and speak would be ZPG, Right to Life, Planned Parenthood, Yale Medical School. And devote each day to a different aspect, such as "Is population a problem?", "What can be done?", etc. I would think people would respond well to

this week.

## 2. Human Population of New Haven

What this activity includes is a class field trip to Grove Street Cemetery to examine old grave stones and try and determine how long people lived for and why. The class would gather the following information: birthdate (month and year), date of death, age of death, and sex on the worksheet. Include children as well as adults. Select a certain time period to look for, people born after 1850 for example and compare it with the early 19th century people born before 1800. List at least 25 people. Then, back in the classroom compare between male and female and how long they lived. If a reason for death was put on the grave stone put that down on your worksheet. Then as a class determine why most people didn't live as long as they do now. (diseases, childbirth, etc.)

## 3. Survey about Overcrowding

As a class put together a survey on overcrowding to hand out to the students and/or the community. Asking questions like "how long do you stand in line in the supermarket? gas station? etc. What are some of the problems caused by population growth? What population growth means and what we need? I'm sure the class could come up with a lot of questions to ask people about overcrowding.

4. The class can make up different charts and graphs using the 1980's census to do the birth and death rates of New Haven, Connecticut, and the United States. These charts and graphs can be made large enough to display in the classroom.

5. Write a report on family planning programs in other countries like China, India, Japan, Russia.

6. Research various wars here in the U.S. and other countries and what they have done to the human population and then write a report on the material.

7. Write a creative paper comparing the population in 1980 and how it will be in the future. (1990, 2000, 2050, etc.)

8. Set up a classroom library on population. Gather pamphlets, booklets, and other resources gotten from different groups on population, birth control, environmental and resource problems. Also see what your school library has on the subject.

9. Write an informative pamphlet on population as a class to be handed out to the school so they are aware of population problems.

10. Vocabulary words that should be defined as they apply to this unit.

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|---------------------------|-----------------------------------|
| a. birth rate             | n. conception                     |
| b. death rate             | o. contraceptives                 |
| c. demographer            | p. U.S. Census Bureau             |
| d. fertility rate         | q. age structure                  |
| e. reproductive age       | r. population control             |
| f. planned parenthood     | s. ZPG                            |
| g. the pill               | t. voluntary population control   |
| h. IUD                    | u. women's liberation movement    |
| i. diaphragm              | v. involuntary population control |
| j. condom                 | w. vasectomy                      |
| k. vaginal contraceptives | x. sterilization                  |
| l. rhythm method          |                                   |
| m. tubal ligation         |                                   |

11. Questions to be used throughout the unit for class discussions.

- a. If population refers to more than fertility control, what does “population” mean?
- b. What social structures and stresses affect family size? Employment opportunities? The changing roles of women?
- c. Are family patterns changing, and if so, what is the effect of these changes on growing elderly populations and alternative family styles.
- d. What is the role of family planning in population programs? Is it effective in limiting population growth?
- e. Should family planning encourage people to have only the number of children they want : no matter how large that number is?
- f. What forms of family planning services have priority in your community? Contraceptions? Abortion? Sterilization?
- g. What factors determine where people live?
- h. Do international economic and political structures affect population size?
- i. Can these structures be manipulated? How and by whom?
- j. What is the potential impact of ZPG on national and local economies?
- k. Does a no-growth population mean that we must adapt to a no-growth economy?
- l. What are the components of a good and successful sex education program?
- m. What realistic objectives should be set for these programs?
- n. What is the difference between population education and sex education?
- o. What is the purpose of population education?

## Worksheet on Human Population

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*(figure available in print form)*

### For the Teacher

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*Organizations to write to:*

1. Youth and Student Affairs

Planned Parenthood World Population

810 Seventh Avenue New York, N.Y. 10019

2. Family Planning Perspectives

P.P. Federation of America, Inc.

515 Madison Ave.

New York, N.Y. 10023

3. The National Education Association publishes

*Environment and Population: A Source Book for Teachers*

NPA Publications

1201 16th St. N.W.

Washington, D.C. 20036

\$3.75

4. Zero Population Growth

1344 Conn. Ave., N.W.

Washington, D.C. 20036

*Movies to Write and Order*

1. *Population and the American Future* is the film version of the Report of the Commission on Population Growth and the American Future. Free loan from—

Modern Talking Pictures

2323 Hyde Park Road

Curriculum Unit 80.05.07

New Hyde Park, N.Y. 11040

2. *Issues in Population: Where the Experts Disagree*

Both the slide show (\$45) and the filmstrip (\$20) are available from—

Audio-Visuals Productions, International Population Program Social Science Building

Cornell University

Ithaca, N.Y. 14850

3. There are 2 films *We* and *Fact Finder of the Nation*

Put out by the Census Bureau on the 1970 census, but I am sure the ones on the 1980 census will be out soon.

Available free of charge from—

National Audio-Visual Center

Washington, D.C. 20409

## Notes

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1. G. Tyler Miller, Jr., *Living in the Environment* (Belmont, Wadsworth Publishing Company, 1979), p. 99.
2. Ibid, p. 105.
3. Miller, p. 101.
4. Ibid, p. 100.
5. Miller, p. 112.

## Student Bibliography

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