

CURRICULA

THIS IS AN 8 PAGE REPRODUCIBLE INSERT TO BE USED AS A TEACHING TOOL



Current Issues In Global Population

THE DAY OF SIX BILLION

October 12, 1999 was designated by the United Nations as "The Day of Six Billion." Around this date, a baby was born who pushed the earth's population to 6,000,000,000. This landmark baby could have been born anywhere in the world, from the comfort of a modern Canadian hospital to the squalor of a scrap-wood shack in India.

The exact details of the birth will never be known, but the science of **demography*** can tell us something about this child. She or he:

- had a 97 per cent chance of being born in a **developing country**
- has a one in five risk of suffering **malnutrition**
- could live to be one of 9 billion humans on earth

This resource examines global population issues that will have a major impact on life in Canada and around the world. The reproducible student handouts and separate teacher's notes are designed for senior elementary and high school levels. An expanded version of Current Issues in Global Population can be found at www.worldvision.ca/resources. The on-line version includes:

- additional information and exercises
- materials for senior high school classes
- links to web sites and teaching materials
- assessment tools and curriculum link

LEARNING OUTCOMES

Students will:

- identify and explain global population trends and major factors affecting those trends
- identify and describe the impact of population trends on life in Canada and the world
- demonstrate an understanding of demographic terms
- use charts, graphs, original research and the Internet to gather and process information
- communicate a synthesis of the unit using a variety of presentation methods

Sources:

Primary sources: *Human Development Report 1998* (United Nations Development Program), *The State of the World's Children 1998* (UNICEF), The United Nations Population Information Network (POPIN) www.undp.org/popin/, the Center for Development and Population Activities (CEDPA) www.cedpa.org/cairo/facts.htm. Complete sources can be found in the on-line version at www.worldvision.ca/resources.

* Have students create a glossary of the terms in bold. Simple definitions can be found at www.popin.org/~unpopterms/.

Contents:

Population Growth,
Environmental Limits,
Demographic Trends,
Population Policy Today,
Teacher's Notes
and Exercises

HANDOUT 1: POPULATION GROWTH

The Numbers

When people think about population, they often focus on **population growth** and the earth's capacity to handle more people. Growth is just one part of population studies, and it is a very important one. The best way to understand how the human family is growing is to look at population numbers through history.

Complete the chart in Table 1. What do you notice about population growth up to 1999? How does the rate of population growth change beyond 6 billion?

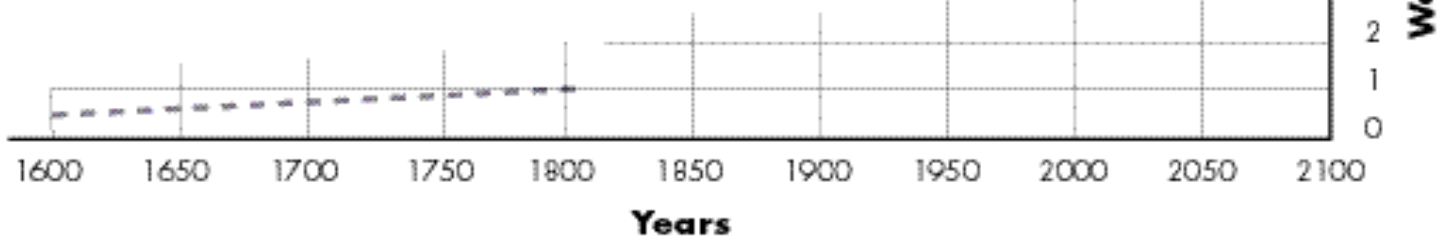
Population	Year	No. of years later
1 billion:	1804	
2 billion:	1927	—
3 billion:	1960	—
4 billion:	1974	—
5 billion:	1987	—
6 billion:	1999	—
7 billion:	2013*	—
8 billion:	2028*	—
9 billion:	2054*	—

* UN medium-range projections

In 1998, the United Nations Population Division revised their population estimates downward to reflect a slowing rate of growth worldwide. Total population grew at its highest rate between 1985 and 1990, at 87 million people each year. Today, the world is growing at a rate of 78 million people yearly.

No one knows how high future population levels will go. The United Nations gives a range of high, low and medium population estimates. The final three figures in Table 1 are the medium range estimates – the most likely scenario. In the other two estimates, the UN predicts that total population in the year 2050 could be as low as 7.3 billion, or as high as 10.7 billion.

Graph the population numbers from Table 1. Show the UN high and low estimates for the year 2050 (see above) with dashed lines. What do you think will affect future population growth?



The Birth/Death Rate Balance

Population growth can largely be explained in terms of changing birth rates and death rates. Human birth rates are naturally high and large families have been the norm for most of history. But historically, life has been very difficult, and death rates have also been high. Children often died at a young age from common diseases such as measles and smallpox. Those who survived were generally poor and many were malnourished. **Life expectancy** was much shorter than it is today. The rough balance between high birth rates and high death rates kept population levels stable for many years.

With the dawning of modern science, and then the industrial revolution in the 1800s, things changed. The new knowledge and wealth led to advances in medical care, sanitation and diet. People were born stronger, grew up healthier, and lived longer. Death rates dropped, but birth rates remained high. The balance was upset and world population rose dramatically.

Only in recent history, as humans gained greater control over **reproductive health**, have birth rates started to decline. And the slowdown has been dramatic – in 1950 the average number of births per woman in the world was five. By 1998, the world average was down to 2.7 births per woman.

HIV/AIDS is having a devastating effect on people in some areas. In the 29 hardest hit African countries, average life expectancy is currently 7 years less than it would have been without AIDS.

In what ways have humans gained greater control over their reproductive health in the latter half of the 20th century?

HANDOUT 2: POPULATION GROWTH CONT'D

List the short-term and long-term impacts on population growth of the demographic factors outlined below. How do these factors affect the quality of life people enjoy – now and in the future?

Population momentum: One of the key reasons for continuing high population growth is past population growth. Because there were larger families a generation ago, there are more people having children today. Population momentum will continue to affect population growth for years to come as the world currently has an unprecedented number of young people. In what some have called a "youthquake," over one billion young people, between the ages of 15 and 24, are now beginning their most reproductive years.

Declining child death rates: The Under-5 Mortality Rate (U5MR) is the number of children per 1000 who die before their fifth birthday. Generally, a high U5MR indicates that a population's basic health care needs are not being met. Over the past half century, progress in the developing countries has greatly reduced the U5MR – from 216 in 1960 to 96 in 1997. During the same period, Canada's U5MR went from 33 to 7.

Desire for larger families: In many parts of the world, children are seen as having great value in and of themselves. It is natural to have large families. Where **infant mortality** is high, parents often have more children for fear that some will not survive to adulthood. Parents may also have solid economic reasons for wanting more children.

In poorer areas, more children mean more help with the hard work of survival, as well as greater assurance that someone will take care of the parents in their old age.

Improved education and living standards: Studies have shown that the more education women receive, the greater the infant survival rate. Birth rates can also be affected. In Brazil, **illiterate** women have an average of 6.5 children, while those with high school education average 2.5. Women who have greater education and work opportunities tend to marry later and have fewer children. As people become better off and see more opportunities for their families, they desire fewer children.

Regional Differences

One of the greatest challenges related to population growth is that almost all of it is happening in the world's poorer countries. Eight out of ten of the world's people currently live in developing countries. However, fully 97 per cent of the new growth is in these countries. Two countries alone are home to over one third of the world's total population growth: India at 21 per cent and China at 15 per cent. By the year 2050, India will be the most populous country, at 1.53 billion. China will be close behind at 1.48 billion.

Complete the chart below. Study the final four columns and decide which areas you think will have the greatest strain from future population growth? Why?

Demographic data by major areas	1998 Pop. (millions)	2050 Pop. (millions)*	Pop. Increase (%)	Pop Density p / sq. km	GNP per capita (\$US)**	U5MR per 1000 births
World	5,901	8,909	51%	44	4,093	79
Africa	749	1,766		25	637	140
Asia	3,585	5,268		113	863	74
Europe	729	628		32	13,786	14
Latin America & Caribbean	504	809		25	3,681	44
Northern America	305	392		14	27,117	7
Oceania	30	46		3	13,519	31

Primary source: www.undp.org/popin/, May 4, 1999 (see this site for a list of countries included in the major areas).

*UN medium-range projections. ** Gross National Product (GNP) per capita indicates average income per person in the region.

Secondary Source: UNICEF, *State of the World's Children* 1998.

HANDOUT 3: ENVIRONMENTAL LIMITS

The Richest One-Fifth

More people means more natural resources used and more garbage generated. But the relationship between population and the environment is not that simple. The 20 per cent of the population who live in the richest countries put far more stress on the earth than does the rest of the world. For example, this richest fifth of the world:

- consumes 84% of all paper; the poorest fifth, 1.1%
- uses 58% of total energy; the poorest fifth, 4%
- consumes 54% of all meat and fish; the poorest fifth, 5%
- owns 87% of the world's vehicles; the poorest fifth, less than 1%.



According to the United Nations, a child born in an industrial country such as Canada will have an environmental impact on the earth 30 to 50 times greater than a child born in a developing country.

Graphically portray the consumption levels listed above. Don't forget to include the remaining 60 per cent of the population. Where do you think Canada is in your diagram?

Poverty and Population

Rich countries have a greater impact on the environment than poor ones. But the combination of growing populations and ongoing poverty in developing countries can also have serious consequences for fragile ecosystems. Poor farmers clear-cut the rainforest in western

Brazil. Migration of poor families in rural Ghana overextends water tables and leads to water shortages. Factories in Thailand pollute into rivers while cash-strapped governments turn a blind eye.

Read the case study from Tanzania below. Make a list of the environmental/population concerns. Make a second list showing how they are being addressed. Note the integrated nature of both the problems and solutions.

Intensive farming in the arid Kahama region of northern Tanzania has greatly depleted the soil. Small harvests often do not last to the next growing season. Another problem in Kahama is deforestation. Trees have traditionally been used for building supplies, curing tobacco and cooking. As the population has grown, much of the forest has vanished, increasing poverty in the area. Lack of tree cover has affected rainfall and rain retention, lowering water tables. An initial World Vision survey found that diseases from overused water holes were a major health risk.



In the World Vision Kahama Community Development Project, men and women receive training in soil and water conservation. They learn about drought resistant crop varieties and how to use compost and manure to improve the soil. Corn yields have increased three times since the project started. New wells are being dug for clean water.

Each of the 30 villages in the area has set aside land for forest conservation. World Vision helped establish tree nurseries, producing hundreds of thousands of tree seedlings. Recently, fuel-efficient stoves made from the clay of anthills, chopped grass and sand have been introduced. As the energy-saving stoves gain in acceptance, they begin to assist in the reforestation process.



Esther Peter now uses just two pieces of wood to cook three meals for her family – one quarter of what she used before.

HANDOUT 4: DEMOGRAPHIC TRENDS

As a global family, we are young but aging quickly, getting richer and poorer, and increasingly living in cities.

This sentence highlights important trends that will greatly affect the way people live. Discuss how the three trends outlined below will influence life for people at home and around the world.

Young But Aging Quickly



In 1998, 30 per cent of the world's population were children, under the age of 16. In regions where population growth rates are high the population is even younger. Africa is the youngest region today – 43 per cent of all Africans are under 16 years of age!

At the same time, falling birth rates and increasing life expectancy are leading to greater numbers of older people in the population mix. This is especially true in richer countries. In 1998, for the first time ever, developed countries had more people over 60 than children under 16. Developing countries are expected to reach this milestone by 2050.

How will an aging population affect life in Canada? What will be the likely consequences in developing countries, where pensions and facilities for the elderly are limited?

Getting Richer and Poorer

Over the past 25 years, people in developed countries have increased their consumption of goods and services by about 2.3 per cent each year. But in 70 poor countries, consumption has actually dropped over the same period! Today, one in five people living in developing countries is malnourished. And, in a number of African countries, malnutrition among children is on the rise.

Looking at the rich world/poor world gap another way, the combined wealth of the world's 225 richest individuals is equal to the annual income of the poorest 2.8 billion people. The United Nations estimates

THE GROWING GAP

Year	Share of Global Income:	
	Richest fifth	Poorest fifth
1960	70.2%	2.3%
1980	76.3%	1.7%
1998	86.0%	1.3%

that \$60 billion – just four per cent of the resources of the 225 richest people – could provide everyone on earth with access to education, adequate food, basic health care, safe water and **sanitation**.

Even as the gap between rich and poor grows, foreign aid from the richest nations is being reduced. Research and discuss Canada's record on foreign aid. You can start at the Canadian Council for International Cooperation site, www.fly.web.net/ccic/, see Development Policy.

Increasingly Living in Cities

About half of the world's people live in cities. They consume 75 per cent of the world's resources and produce most of its pollution. And, large cities continue to grow faster than the general population. Much of this growth in developing countries is due to migration as people move to cities from rural areas in search of work, schooling and health care. Unfortunately, many of these families wind up in over-



crowded slums, **unemployed** or **under-employed**. One of the greatest challenges facing cities today is coming up with creative ideas to meet the needs of their growing populations.

Think of a large city close to you. What are some of the population-related problems people face (homelessness, traffic, waste disposal, etc.)? What are possible solutions to these problems?

HANDOUT 5: POPULATION POLICY TODAY

In 1994, representatives from 179 countries met in Cairo, Egypt, for the United Nations' International Conference on Population and Development. There had been previous conferences, but, in many ways, Cairo represented a turning point, setting the tone for much of population policy today.

Empowerment of Women

Cairo was a victory for people over numbers. Until the 1994 conference, population policy was largely based on the use of incentives and coercion to meet numerical targets. Cairo focused on the empowerment of people – especially women – in population policy. Empowering women – through expanded access to education, health services, employment and decision-making – is the most effective way to deal with current and future population issues.



In the area of education, for example, research shows a positive link between increased schooling for women and effective population practices. In the southern Indian state of Kerala, literacy rates are the highest in the country, and birth rates are the lowest. Most notably, infant mortality in Kerala is the lowest in the entire developing world! World Vision's 50 years of experience in developing countries verifies that involving women in the planning and running of programs is the best way to promote improvements in families and communities.

Expanded access to education is one example of empowerment. Consider the other ways of empowerment mentioned above. How might they affect population issues?

Population, Development and the Environment

Cairo also clearly established the link between population, development and the environment. Delegates agreed that slowing down population growth is an important part of social and economic development. At the same time, they agreed that poverty has serious consequences for population policy and for the environment. The delegates at Cairo drew up an action plan that supported sustainable development as a major component in good population policy and practice.

Sustainable development: programs designed to improve the living conditions of people while protecting resources, thus enabling the programs to continue indefinitely.

– Dictionary of Demographic and Reproductive Health Terminology

Do you think the Canadian model of development is sustainable? Why or why not?

CONCLUSION

This look at current global population issues shows that progress has been made in the five years since Cairo. Population growth is slowing. Many countries have now enacted gender action plans that promote and protect women's rights. And there are many examples of progress in health, education and environmental protection.

But this study also reminds us of the many population issues we still face. We live in a world where most babies born today have a one in five chance of growing up malnourished. At the same time, the few children born in the richer countries will likely consume resources at levels that will push this planet beyond its sustainable limits.



In light of this human dilemma we share, population policy cannot be left to government leaders alone. Each person on earth today is responsible to ensure that the world we pass on to future generations is the best world possible.

What actions can you take to pass on "the best world possible?"

TEACHER'S NOTES AND EXERCISES

INTRODUCTION: THE DAY OF SIX BILLION

Use the reflection on October 12, 1999 to introduce the topic. Each year, October 16 is World Food Day, focusing on issues linked to population studies. Your class can participate in a World Food Day Teleconference: see www.gsu.edu/~wwwwfd/ or contact the Washington-based World Food Day Committee at 202-653-2404; fax 202-653-5760.

HANDOUT 1: POPULATION GROWTH

The Numbers

① **Begin by brainstorming a list of "Global Population Issues."** Help students expand their concept of population issues beyond numbers to include quality of life issues such as health, education, human rights, gender and income equity, as well as concerns about consumption and the environment. Post this list (on paper or electronically) and have students add to it as you work through the unit.

② Is the earth overcrowded? If the world's 6 billion people were to come to Canada, in which area would they all fit with just over 12 square metres (the size of a living room) each: Canada, 9,970,610 sq. km.; Ontario, 1,068,580 sq. km.; or New Brunswick, 73,440 sq. km.? Have students do the math to confirm their answer (New Brunswick).

The Birth Rate/Death Rate Balance

Students can do primary research on changes in birth and death rates:

a) Survey the sizes of students' families, going back two generations. This should show declining birth rates. If some students do not know their grandparents' family size, establish an average based on the sample available.

b) Research gravestone dates in an old cemetery to see higher death rates in the past. This can also be done on-line by typing "cemetery archives" into an Internet search engine.

HANDOUT 2: POPULATION GROWTH CONT'D

① **Population momentum.** Some see the current "youthquake" as a demographic bonus – a bulge of human resources unleashed in the world. Others see it as a demographic headache – an urgent need for more education, health care and jobs. How do students see it – as a bonus or a headache? Why?

② **Declining child death rates.** Note that 96 out of 1000 children in developing countries dying before the age of 5 is still high. This is an average. Have students chart actual country U5MRs from the UNICEF site at www.unicef.org/status/. What conclusions can they draw?

③ **Desire for larger families.** How many children would students like to have? Why are people choosing to have smaller families today? Do similar reasons hold for families in developing countries?

④ **Improved education and living standards.** Do students agree that education and improved living standards ease population pressures? What is the connection? In many parts of Africa, the standard of living has declined over the last 25 years. What might this mean for population growth? For quality of life?

Regional Differences

① Among the findings in the last four columns of the chart on page 3 are:

- Africa is very poor, has a high growth rate, and has poor health provisions (U5MR of 140)
- Asia is densely populated, is poor, and has inadequate health provisions
- Latin America and the Caribbean are growing somewhat higher than the world average
- Northern America is growing slowly while Europe has negative growth; both are wealthy

② **"Poor regions are heavily populated."** Do the population density figures in the chart confirm this assumption? Test it further by using an atlas or geography program to calculate population densities of sample countries in Europe and Africa. Note that the number of people a country can support is more influenced by the resources of the country than by land mass.

HANDOUT 3: ENVIRONMENTAL LIMITS

① **Introduce the unit with an activity demonstrating global consumption disparities:** Divide the class into five groups. Distribute 100 animal crackers or other small snacks to the class: 86 to one group, 10 to another group, and 4 to the remaining three groups. This is the actual pattern of consumption in our world. Discuss.

② **What can Canadians do to decrease their impact on the environment?** Canada and Kenya have approximately the same size populations. In 1994, Canada's commercial energy use (all energy used for factories, stores, houses, transportation, etc.) was the equivalent of 230 million tons of oil. For Kenya it was 2.8 million tons.


③ **An in-depth look at the interplay between environment, population and development:** View the video, *The Valley* (55 minutes – best viewed in two classes, available from World Vision – see this page). This video examines famine and development in Ethiopia. Complete study guide included. Caution, some graphic scenes of suffering.

HANDOUT 4: DEMOGRAPHIC TRENDS

① What do you think are the social challenges facing a poor country where 43 per cent of the population is under the age of 16? (African average)

② **We do not have to look beyond Canada for signs of the growing gap between rich and poor.** Have students research and present data showing income trends in Canada. One place to start is the Canadian Council on Social Development, www.ccsd.ca


③ **Large cities in developing countries deal with both urban growth and poverty.** Have students choose one large city such as Mexico City or Calcutta and research the population issues it faces.



World Vision

**Current Issues
in Global
Population**

**The Cairo+5
population
conference
simulation**
teacher's guide and
assessment tools



**A Culminating Event for
the Ontario Curriculum
Grade 8 Geography Topic:
Patterns in Human Geography**

POPULATION POLICY TODAY:

FINAL PROJECT

Throughout 1999, the United Nations sponsored a number of international Cairo+5 conferences to assess progress and renew political commitment on population action. Have your students imagine that they have been invited to one of these conferences to give a North American youth perspective on population issues.

Students present what they would tell the conference. Give them an appropriate time limit based on the skill level of the class and whether it is an individual or group exercise. Keep the presentation time short so that messages have to be prioritized. Provide students with the following guide to help them organize their presentations:

- review the unit and note what you think are key points
- know your audience (government decisionmakers)
- decide what you hope to achieve with this group
- determine which messages to focus on
- decide on an effective presentation method

Hold your own Cairo+5 conference! World Vision has created a detailed *Culminating Activity with Assessment Tools* designed for use with this unit on *Current Issues in Global Population*. This highly participatory student activity is built around a simulated international population conference that allows students to apply what they have learned about population policy and sustainable development.

A complete package with everything you will need for this activity is available from World Vision for just \$5 – call 1-800-268-1650. Or you can download it for free at www.worldvision.ca/resources

This teaching unit has been written and sponsored by World Vision with financial support from the Canadian International Development Agency (CIDA).

Related educational resources from World Vision:

kNOw hunger teaching kit with video

The Valley video with study guide

These and other teaching resources can be ordered at

www.worldvision.ca/resources.

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