

Lesson #7 & Lesson #8

Population Attributes

---

---

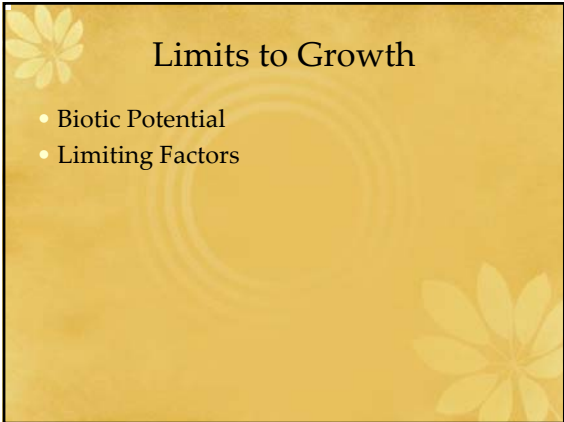
---

---

---

---

---



Limits to Growth

- Biotic Potential
- Limiting Factors

---

---

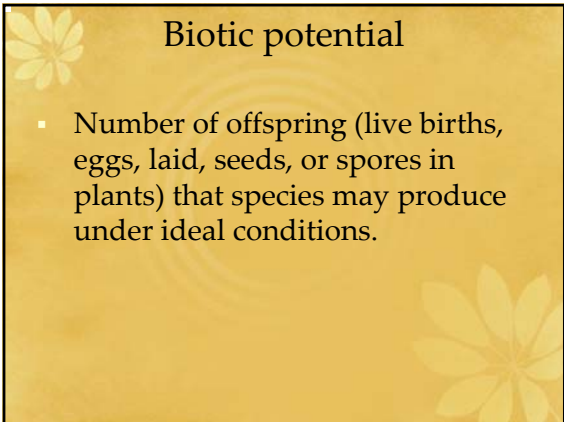
---

---

---

---

---



Biotic potential

- Number of offspring (live births, eggs, laid, seeds, or spores in plants) that species may produce under ideal conditions.

---

---


---

---

---

---

---

 **The intrinsic rate of increase**

- Rate at which population would grow if it had unlimited resources (never the case).
- Species can have a high rate or a low rate.

---

---

---

---

---

---

---

---

 **Environmental Resistance**

- All factors (biotic & abiotic) that limit the growth of population.

---

---

---


---

---

---

---

---

 **Carrying capacity**

- Maximum population of a species that a given habitat will support.

---

---

---

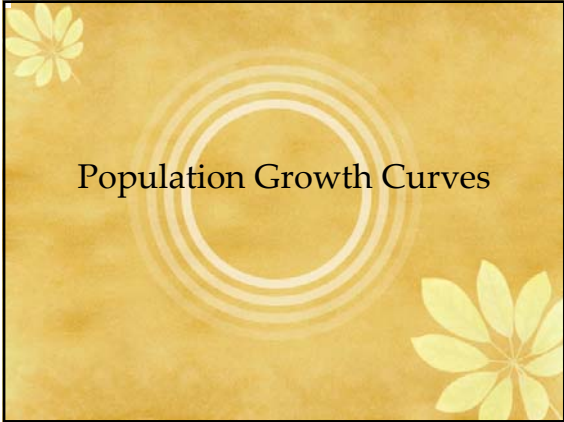
---

---

---

---

---



## Population Growth Curves

---

---

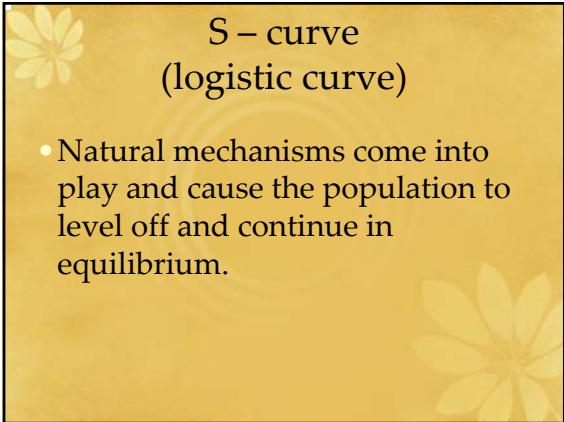
---

---

---

---

---



### S – curve (logistic curve)

- Natural mechanisms come into play and cause the population to level off and continue in equilibrium.

---

---

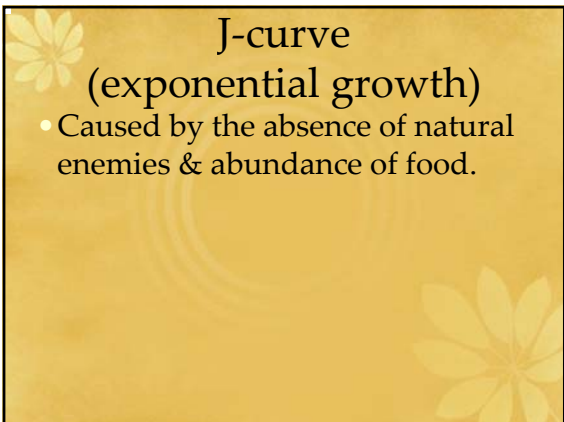
---

---

---

---

---



### J-curve (exponential growth)

- Caused by the absence of natural enemies & abundance of food.

---

---

---

---

---

---

---



---

---

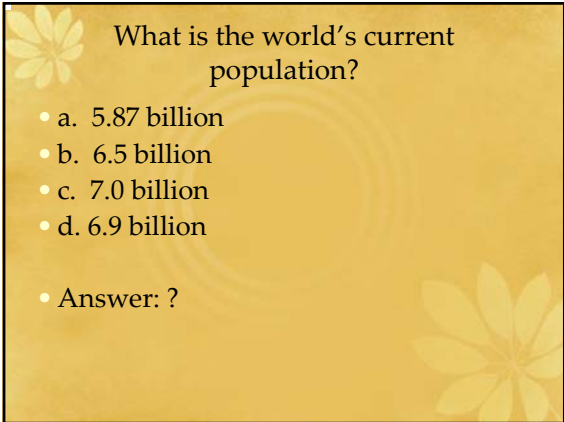
---

---

---

---

---



---

---

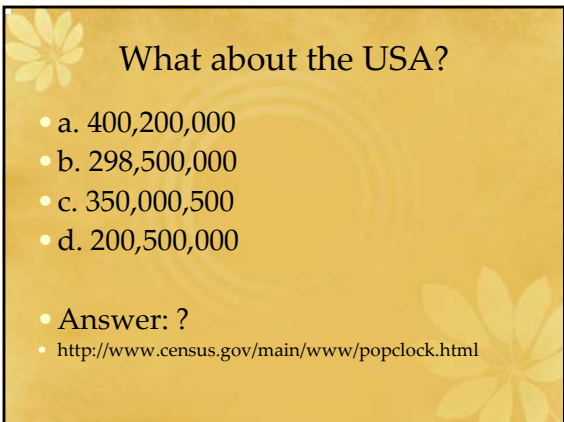
---

---

---

---

---



---

---

---

---

---

---

---

### What is the current world growth rate?

- a. < 1 percent
- b. 1.2 percent – 1.3 percent
- c. 4 percent – 5 percent
  
- Answer: ?

---

---

---

---

---

---

---

### Fastest Growing Countries

- India (adds 20 million annually)
- China
- Pakistan
- Nigeria
- Bangladesh
- Indonesia

---

---

---

---

---

---

---

### What do we mean by growth rate?

- Basic idea:
- Population change = (births + immigration) – (deaths + emigration)

---

---

---

---

---

---

---

## Crude Birth Rate

- The number of live births per 1000 people in a population in a given year.
- Crude = basically saying that this number takes in account the entire population (old, young, male, female)

---

---

---

---

---

---

---

## Crude Death Rate

- The number of deaths per 1000 people in a population in a given year.

---

---

---

---

---

---

---

## Infant Mortality Rate

- The number of babies out of every 1000 born that die before their first birthday.
- Developing countries have greatly improved but still 22,000 infants die per day.

	2000	1965
Developed	8	20
Developing	63	118
World	57	
USA	7	
Africa	88	

---

---

---

---

---

---

---

## Natural Growth Rate

- Annual rate of increase
- Rate of natural increase
- $NGR = \frac{\text{birth rate} - \text{death rate}}{1000 \text{ people}} \times 100$
- $NGR = \frac{\text{birth rate} - \text{death rate}}{10} = \% \text{ increase}$

---

---

---

---

---

---

---

## Growth Rate

- Includes net migration (immigration – emigration)
- $GR = \frac{BR - DR + \text{net migration}}{1000 \text{ people}} \times 100$
- $GR = \frac{BR - DR + \text{net migration}}{10} = \% \text{ increase}$

<http://www.census.gov/ipc/www/idbr.html>

---

---

---

---

---

---

---

## What is ZPG?

- Zero population growth = stable population
- $ZPG = \text{births} - \text{deaths} + \text{migration} = 0$
- Do you feel that this can be achieved world wide?

---

---

---

---

---

---

---

 Replacement Level Fertility

- The number of children a couple must bear to replace themselves.

---

---

---


---

---

---

---

---

 Total Fertility Rate (TFR)

- Estimate of the average number of children a woman will have in her lifetime. (between the ages of 15 – 44 years old)

---

---

---

---

---

---

---

---

 Factors that affect birth rates and fertility rates.....

These factors are for both developed and developing countries.

---

---

---

---


---

---

---

---





## Factors affecting Birth Rates & Fertility Rates

- Importance of children in the labor force.
- Urbanization – people living in cities have access to family planning.
- Cost of raising & education children.
- Educational & employment opportunities for women.
- Infant mortality rate (lower = less births)

---

---

---


---

---

---

---

---



## Factors affecting Birth Rates & Fertility Rates

- Average age of marriage.
- Availability of pensions – eliminates need for children to support parents.
- Availability of birth control.
- Religious and/or cultural beliefs.
- Laws (i.e. China)

---

---

---


---

---

---

---

---



## Population Age Structures

- Bar graph showing the number or proportion of people (males & females) at each age for a given population.

---

---

---

---

---

---

---

---



## Population Profiles

- <http://www.census.gov/ipc/www/idbpyr.html>

---

---

---

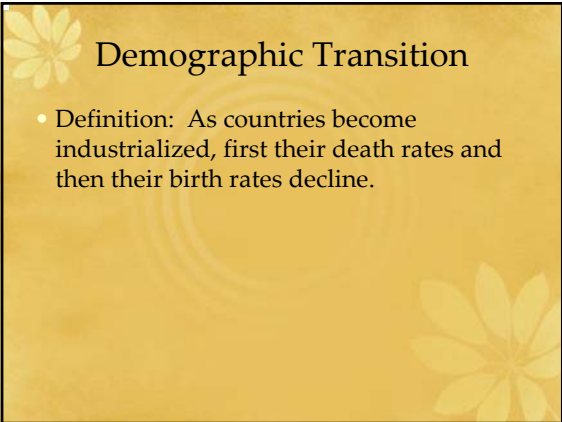
---

---

---

---

---



## Demographic Transition

- Definition: As countries become industrialized, first their death rates and then their birth rates decline.

---

---

---

---

---

---

---

---



## Social Modernization

- Ways to help developing countries to lower their population growth rate.
- 1. Education
- 2. Family Planning
- 3. Improving Health
- 4. Employment Opportunities
- 5. Improve Resource Management

---

---

---

---

---

---

---

---

A slide with a gold background, a central circular graphic, and floral motifs. The text reads: "Modern Family Planning Movement" and "One major example".

Modern Family Planning Movement

One major example

---

---

---

---

---

---

---

---

A slide with a gold background, a central circular graphic, and floral motifs. The text reads: "China's Family Planning Program".

China's Family Planning Program

---

---

---

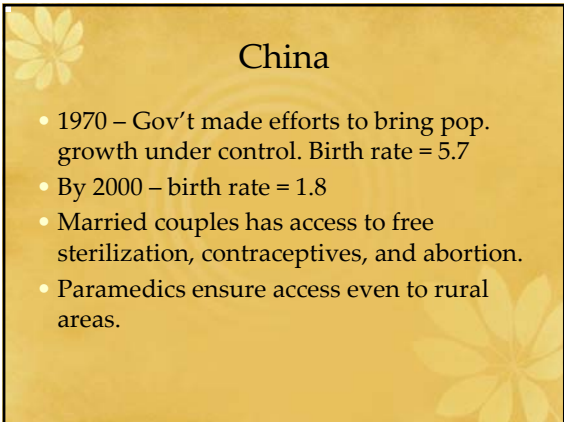
---

---

---

---

---

A slide with a gold background, a central circular graphic, and floral motifs. The text reads: "China" and a list of bullet points.

China

- 1970 – Gov't made efforts to bring pop. growth under control. Birth rate = 5.7
- By 2000 – birth rate = 1.8
- Married couples has access to free sterilization, contraceptives, and abortion.
- Paramedics ensure access even to rural areas.

---

---

---

---

---

---

---

---



### Benefits of one child

- Extra food
- Larger pensions
- Better housing
- Free medical care
- Salary bonuses
- Free school tuition for that child
- Preferential treatment in employment

---

---

---

---

---

---

---

---



### China

- If a couple has more than one in urban areas they lose all benefits. Two are allowed in rural areas.
- 81% of married women in China are using modern contraceptives.

---

---

---

---

---

---

---

---



### Food Production & Population

---

---

---

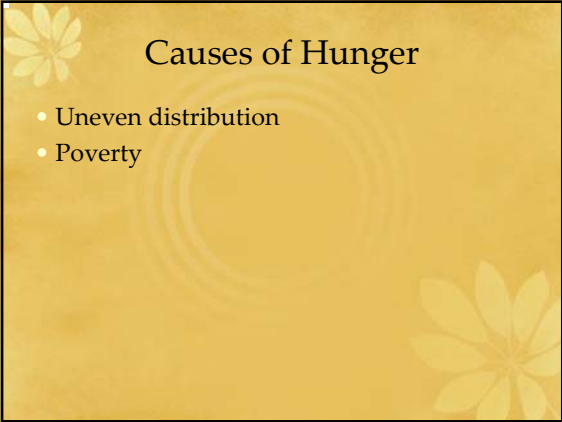
---

---

---

---

---



## Causes of Hunger

- Uneven distribution
- Poverty

---

---

---

---

---

---

---



## Ways to increase food production

- Aquaculture
  - Farm raised fish & shellfish
- Green Revolution
- Gene Revolution
  - Genetically modified foods

---

---

---

---

---

---

---