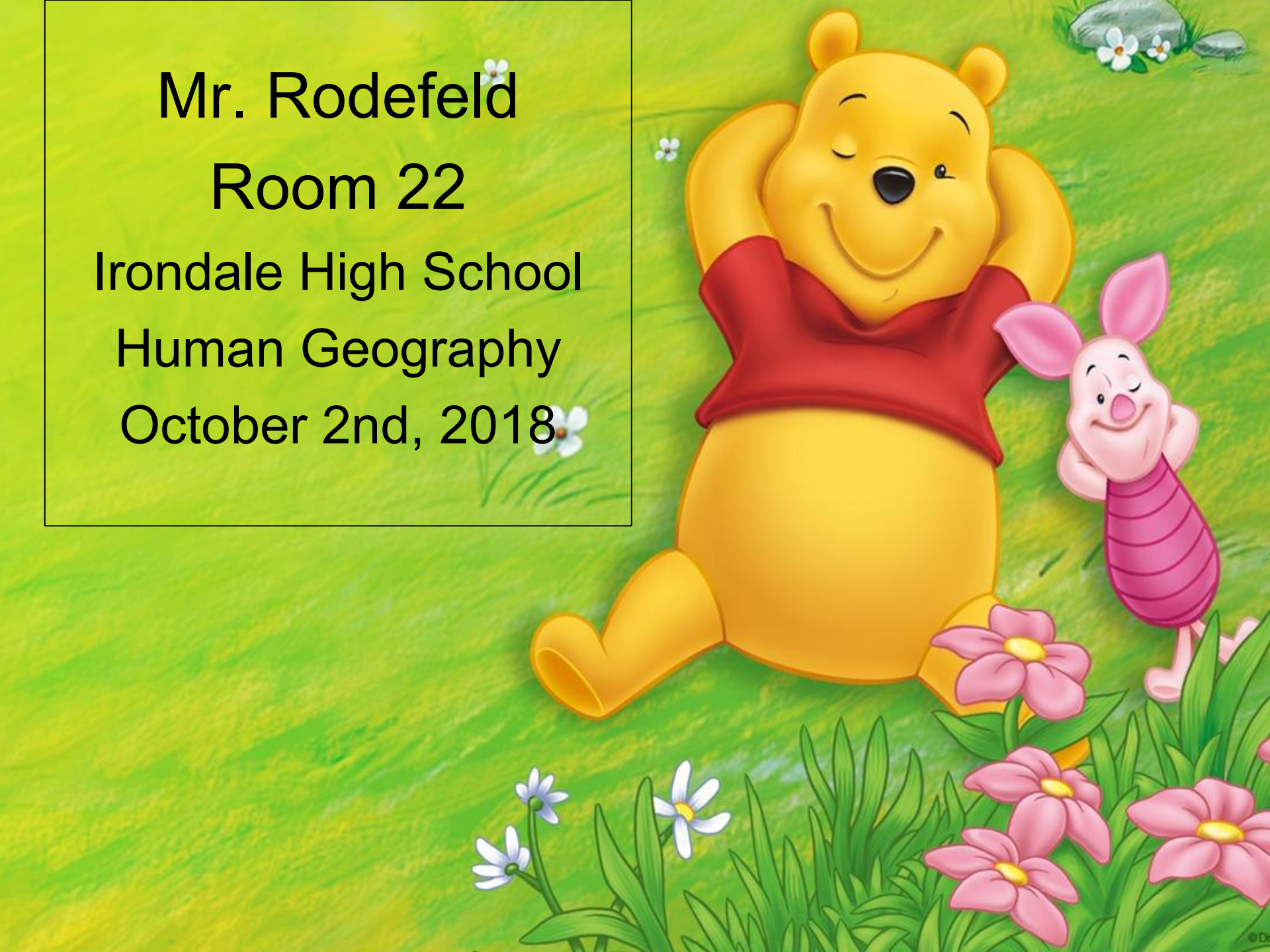
Mr. Rodefeld

Room 22

Irondale High School

Human Geography

October 2nd, 2018




Lilo & Stitch
1st Hour 8:35 - 9:31
2nd Hour 9:37 - 10:33
3rd Hour 10:39 - 11:35
4th Hour 11:41 - 1:11
5th Hour 1:17 - 2:13
6th Hour 2:19 - 3:15
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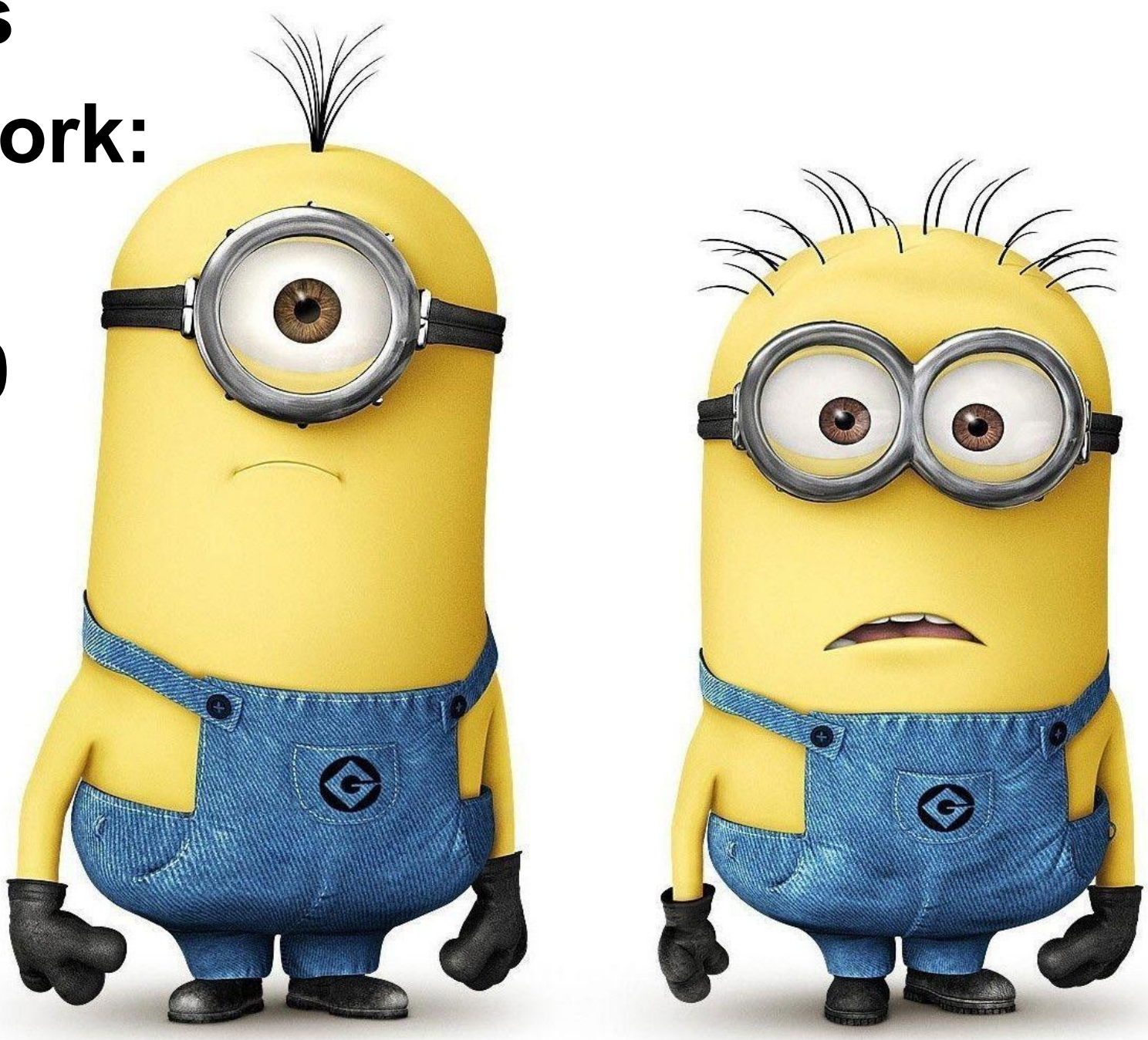
Today in Class: Slideshow Notes

Today's Homework:

Read p. 39-40

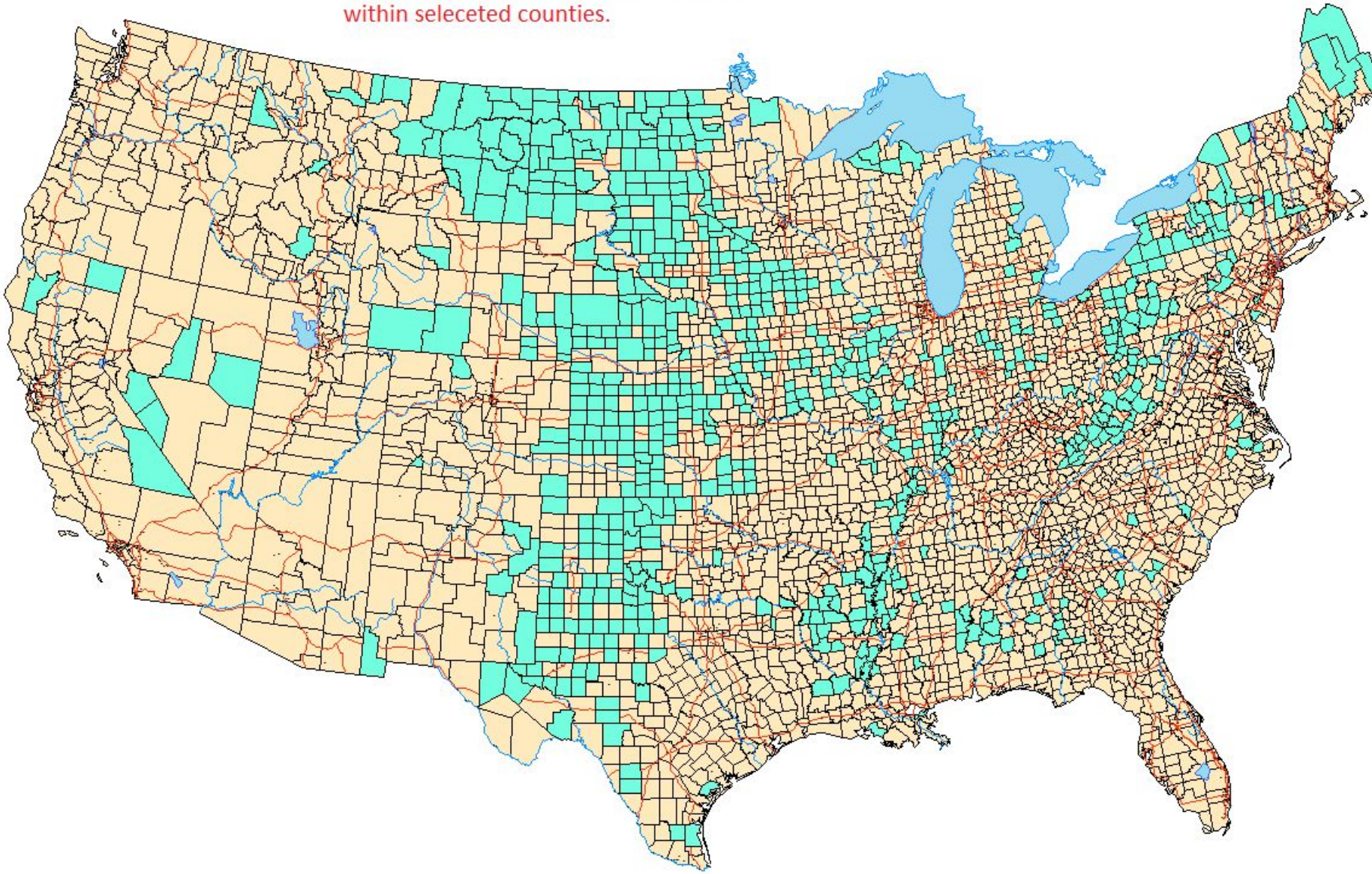


Tomorrow in Class

The Owls

https://www.nytimes.com/interactive/2018/09/19/upshot/facebook-county-friendships.html

Population decrease from 1990 to 2000
within seleceted counties.



THE U.S. MAP DISTORTED BY POPULATION


There are more people living inside
this circle than outside of it.

https://www.gapminder.org/tools/#$chart-type=bubbles

Gap minder

Unit 2: Population and Migration

Introduction to Unit 2

Overpopulation: an area's population exceeds the capacity of the environment to support it at an acceptable standard of living

*In your notes, finish this sentence in your own words: ***"Overpopulation is:"***

-complete this sentence using your own words...try not to use any of the words in the above definition.

Learning Targets 2.1:

- Identify the four regions where most of the world's human inhabitants are clustered.
- List the main reasons for the uneven distribution of the world's human population.

2.1 Population Concentrations

- **Sparsely populated regions**
- **Humans avoid clustering in certain physical environments.**
- **Humans avoid the "too's"**
  - Too Hot
  - Too Dry
  - Too Cold
  - Too Mountainous
  - Too Wet

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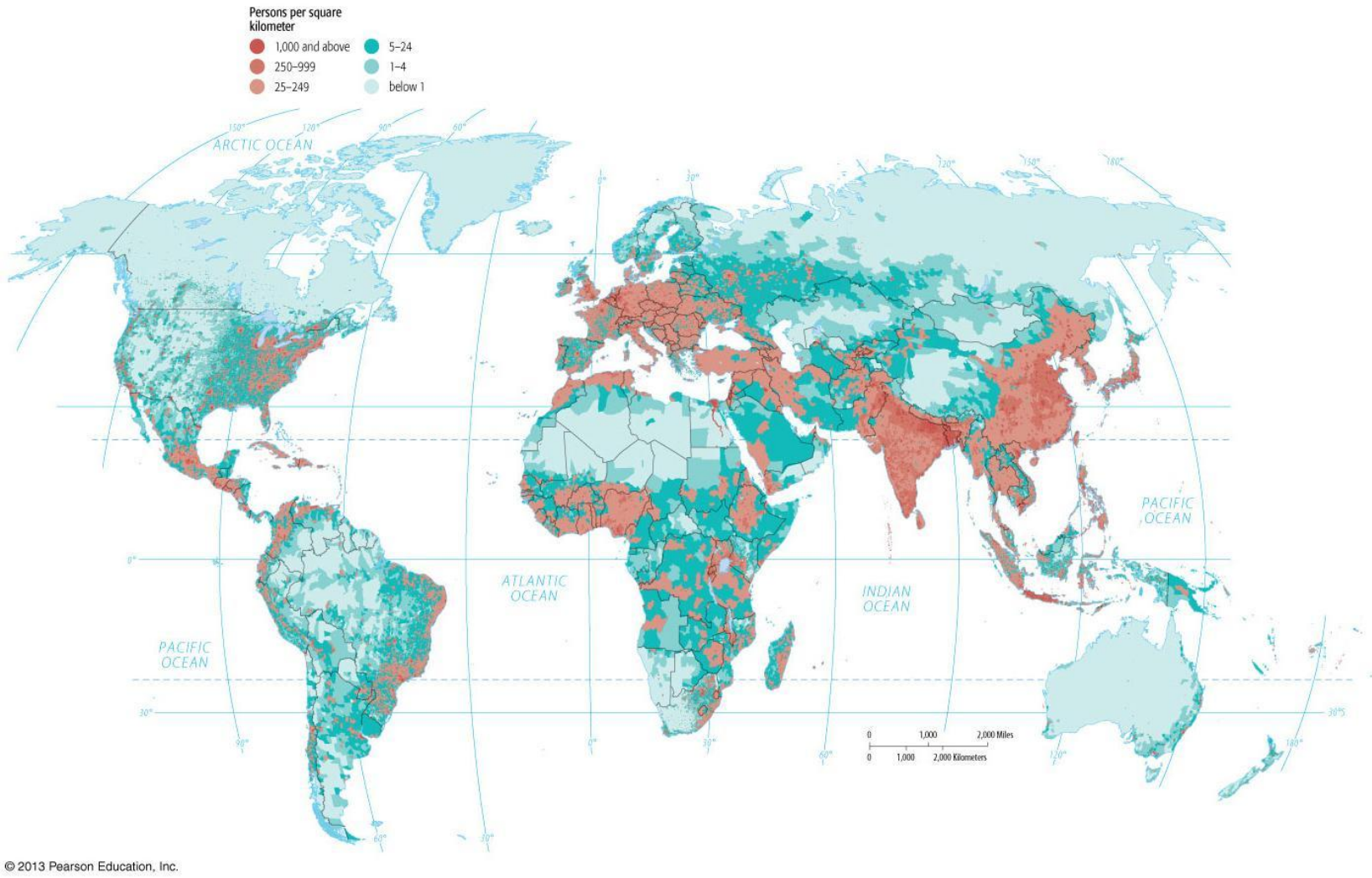
2.1 Population Concentrations



FOUR POPULATION CLUSTERS

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2.1 Population Concentrations

- **Heavily populated regions**
- **<u>4 Main Population Clusters:</u>**
  - East Asia (China, Japan, South Korea)
  - South Asia (India, Bangladesh,Pakistan)
  - Southeast Asia (Indonesia, Philippines, Vietnam)
  - Western Europe (mostly urbanized)

these clusters contain 2/3's of entire human population!

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2.1 Population Concentrations

Countries with populations over 100 million are labeled.

POPULATION CARTOGRAM

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2.1 Population Concentrations

*What is the world's most populous country?

China

Quiz

List each of the four major clusters of human population and give one fact about each cluster.

Learning Target 2.2:

- Compare and contrast the three types of population density.

7 Billion and Counting video Clip

https://www.youtube.com/watch?feature=player_detailpage&v=d1dIAtvSFLM

Population Clock:

http://www.census.gov/popclock/

https://www.vox.com/2016/1/30/10872878/world-population-map

2.2 Population Density

- **Density**
  - The number of something that occupies an area of land

- ***Arithmetic density**
  - The number of people per unit area of land
    - **i.e. --** population density

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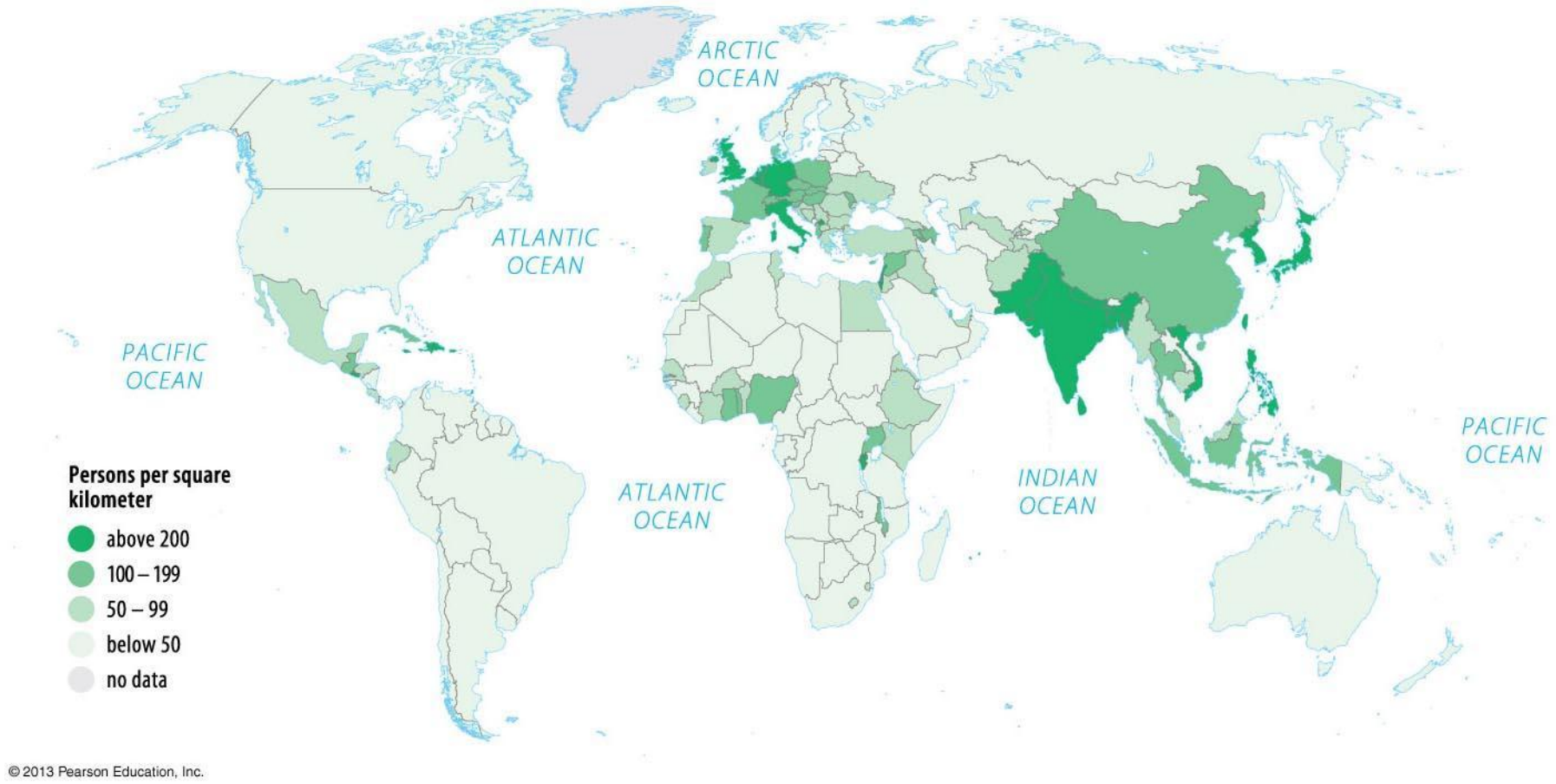
2.2 Population Density



ARITHMETIC DENSITY

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2.2 Population Density

	ARITHMETIC DENSITY (population per square kilometer)	POPULATION 2010 (million people)	LAND AREA (million square kilometers)
Canada	3	34	10.0
United States	32	310	9.6
Netherlands	400	17	0.04
Egypt	80	80	1.0

ARITHMETIC DENSITY OF FOUR COUNTRIES

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2.2 Population Density

- ***Arable land:** land suited for agriculture

- ***Physiological density**
  - Total number of people supported by a unit of arable (farmable) land

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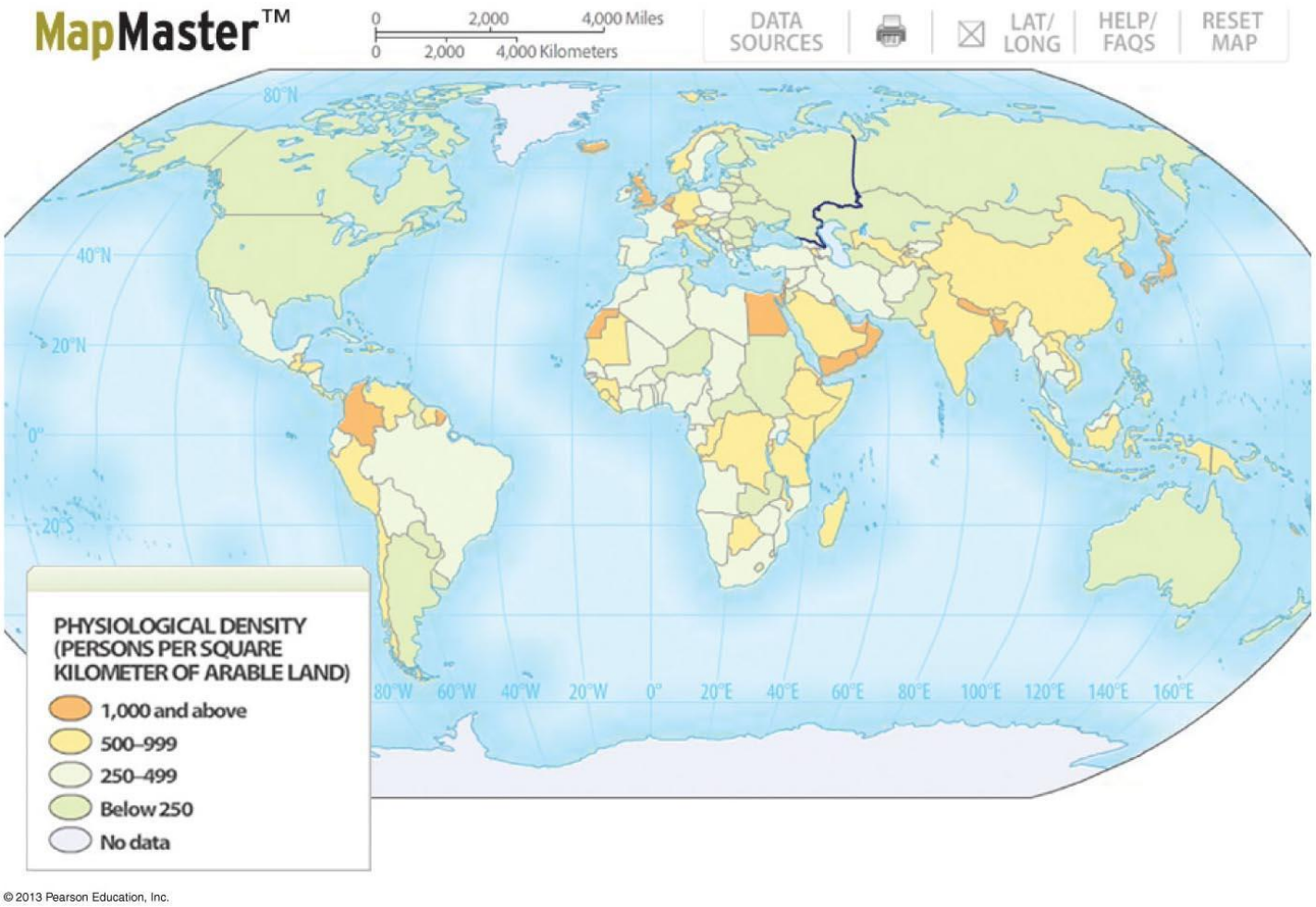
2.2 Population Density



PHYSIOLOGICAL DENSITY

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2.2 Population Density

	PHYSIOLOGICAL DENSITY (population per square kilometer of arable land)	ARABLE LAND (million square kilometers)
Canada	65	0.5
United States	175	1.7
Netherlands	1,748	0.01
Egypt	2,296	0.03

PHYSIOLOGICAL DENSITY OF FOUR COUNTRIES

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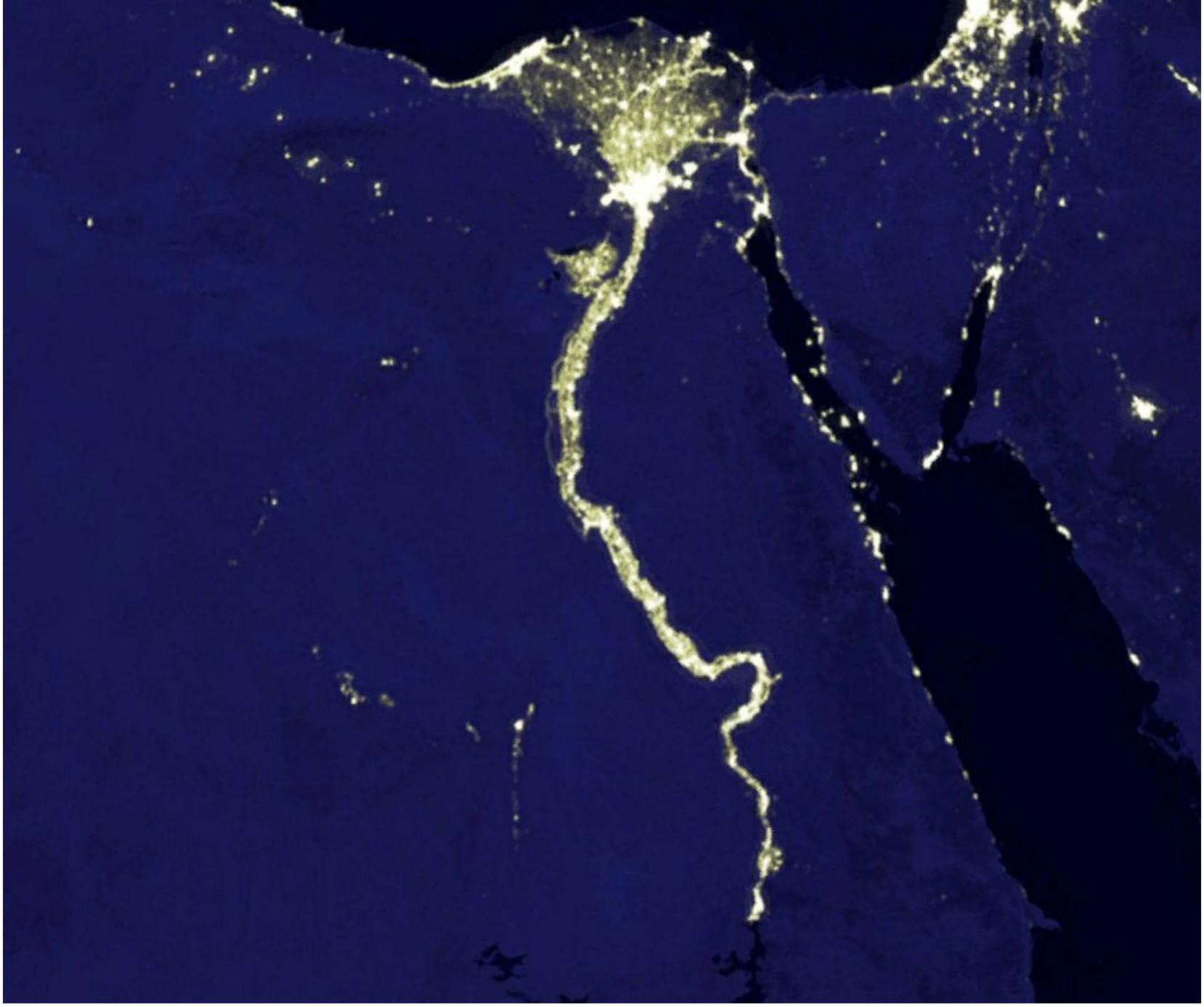

2.2 Population Density

- **Agricultural density**
  - Ratio of the number of farmers to the amount of arable land
  - *This is used to determine a country's farming efficiency

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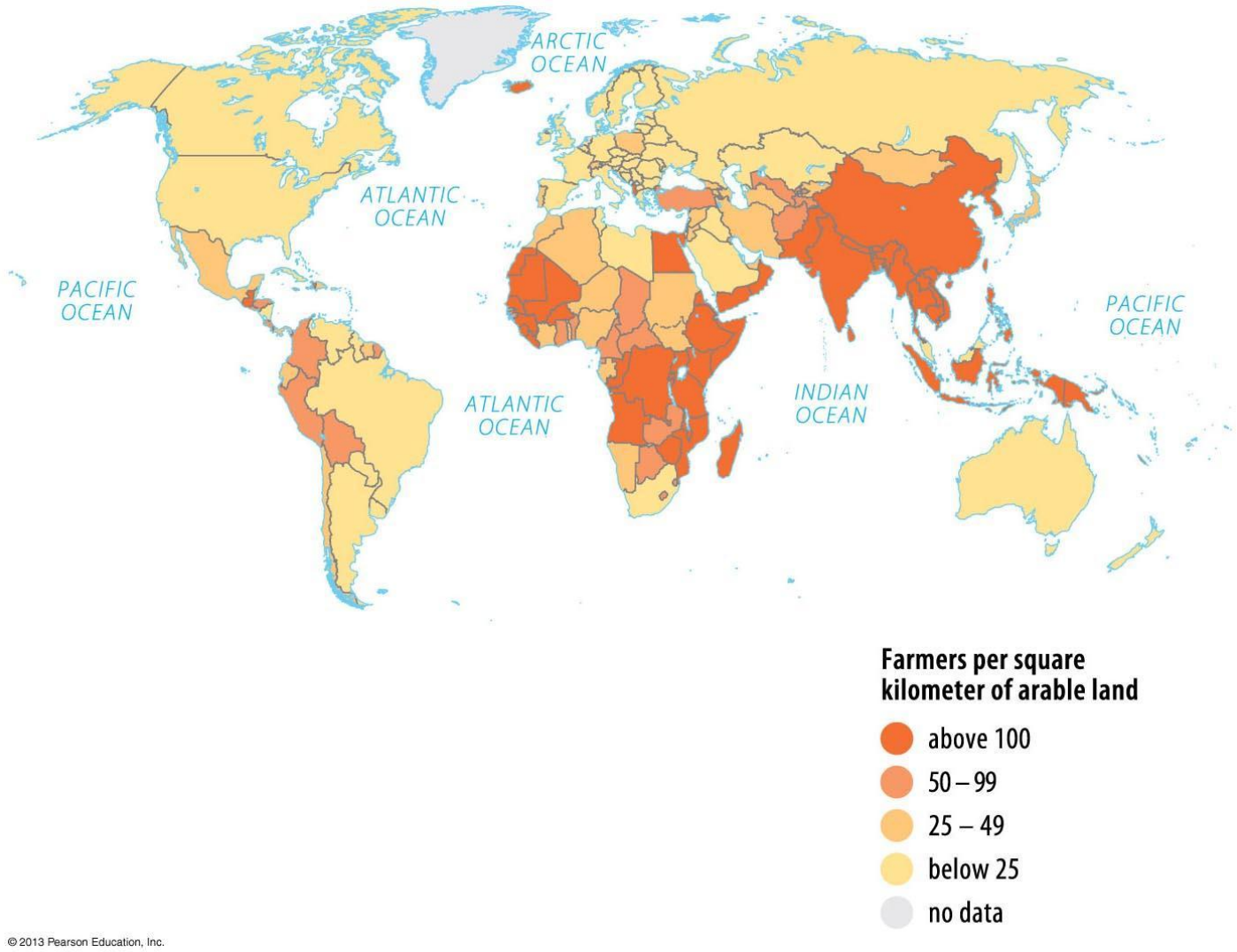
2.2 Population Density



AGRICULTURAL DENSITY

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2.2 Population Density

	AGRICULTURAL DENSITY (farmers per square kilometer of arable land)	PERCENT FARMERS
Canada	1	2
United States	2	2
Netherlands	23	3
Egypt	251	31

AGRICULTURAL DENSITY OF FOUR COUNTRIES

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Summarizing the Three Types of Density

	ARITHMETIC DENSITY (population per square kilometer)	POPULATION 2010 (million people)	LAND AREA (million square kilometers)
Canada	3	34	10.0
United States	32	310	9.6
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	AGRICULTURAL DENSITY (farmers per square kilometer of arable land)	PERCENT FARMERS
Canada	1	2
United States	2	2
Netherlands	23	3
Egypt	251	31

1. Which country puts the most stress on its agricultural land?

Egypt

Do You Know?... (for your notes)

*A country with a large amount of arable land and a small amount of farmers will have which of the following?

a. high physiological density
b. low physiological density
c. high agricultural density
d. low agricultural density

low agricultural density

Learning Target 2.3:

- Explain the three types of indicators used by geographers to measure population change.

2.3 Components of Change

3 Measures of population change

1. **Natural Increase Rate (NIR)**
   - Percentage by which a population grows in a year
   - Only uses birth and death rates
   - Immigration and emigration are excluded

Where are the highest and lowest rates of natural increase?

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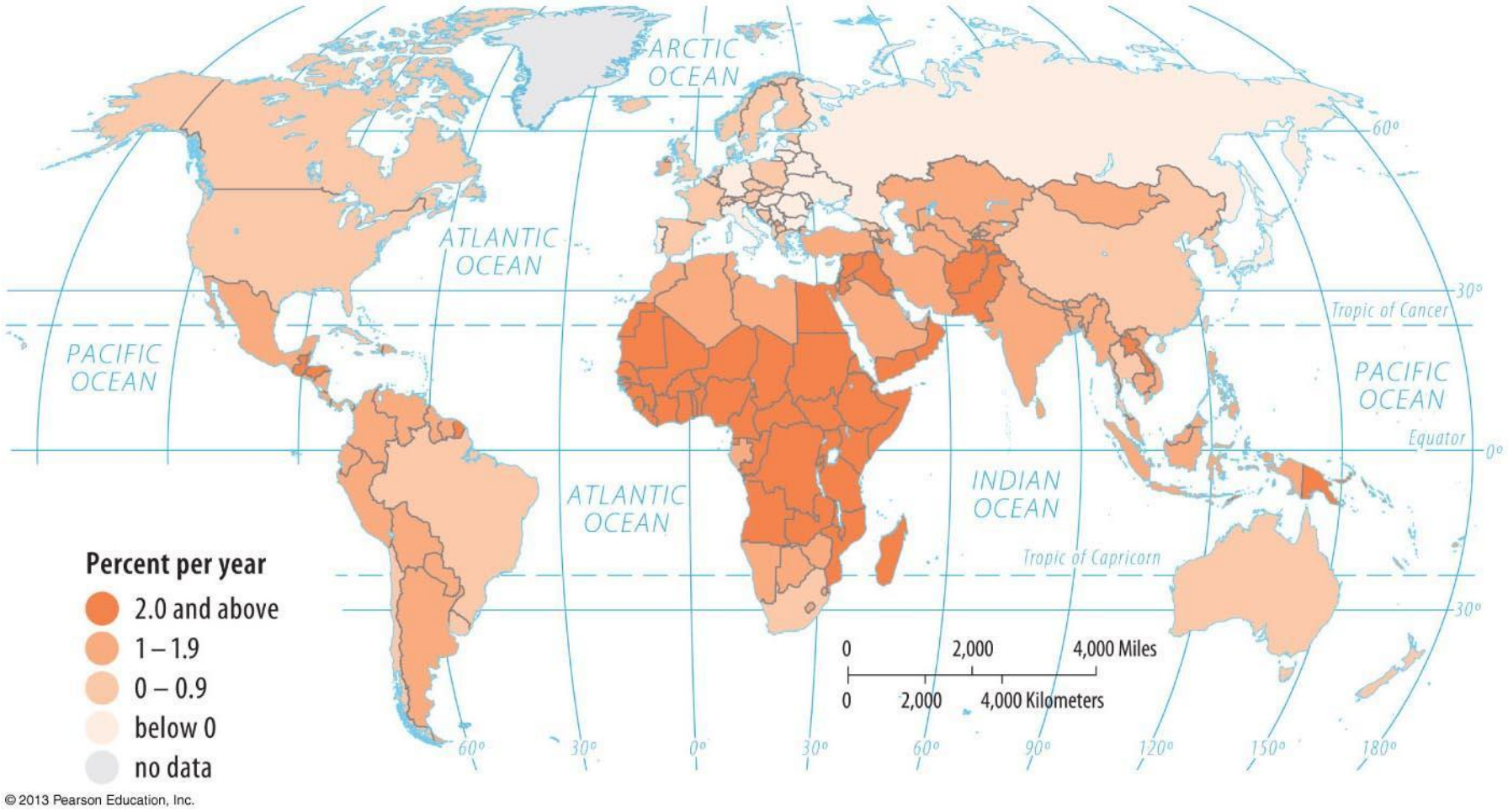
2.3 Components of Change



NATURAL INCREASE RATE

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2.3 Components of Change

- **Doubling time**
  - Number of years needed to double a population

NIR of 1.0 = 70 year doubling time

NIR of 1.2 = 54 year doubling time

- Many NIR above 2.0 in Sub-Saharan Africa, SW Asia, and North Africa
- Many negative NIR in Europe
  - what does a negative NIR mean?

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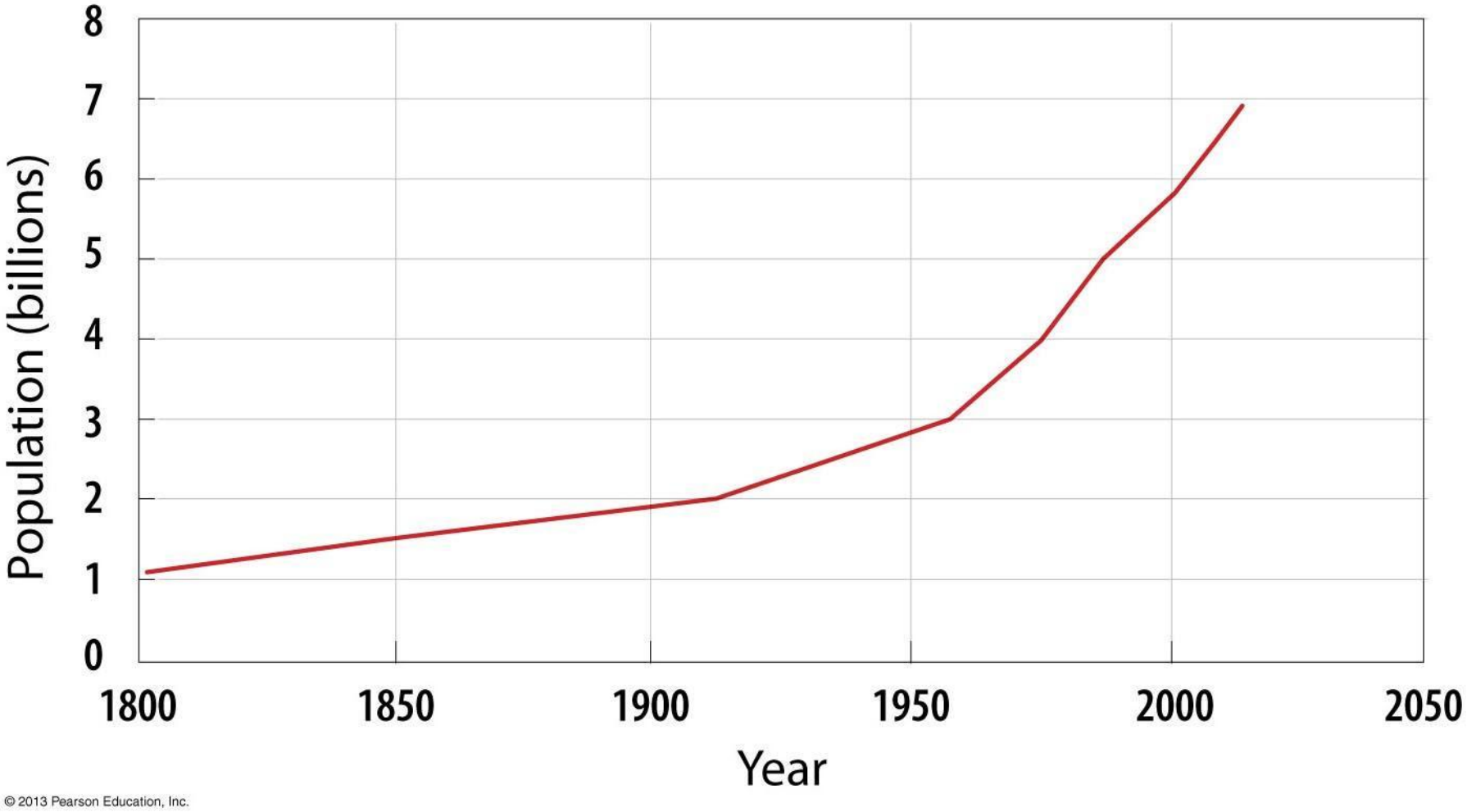
2.3 Components of Change



WORLD POPULATION GROWTH

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2.3 Components of Change

3 Measures of population change

2. Crude Birth Rate (CBR)

- Total number of live births/year/1,000 people in a society

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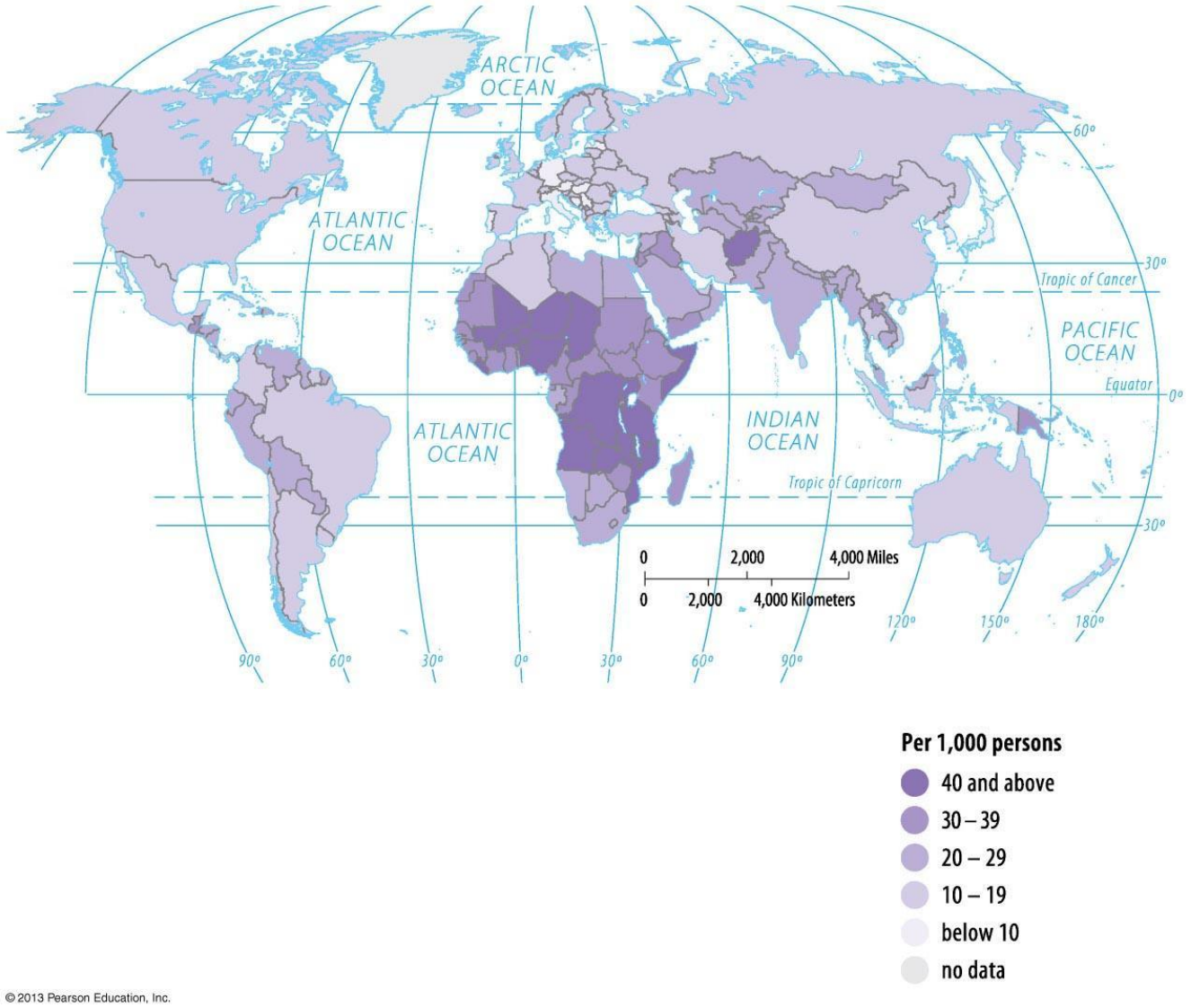
2.3 Components of Change

*Where are the highest CBRs?

Sub-Saharan Africa



CRUDE BIRTH RATE

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2.3 Components of Change

3 Measures of population change

3. Crude Death Rate (CDR)

- Total number of deaths/year/1,000 people in a society

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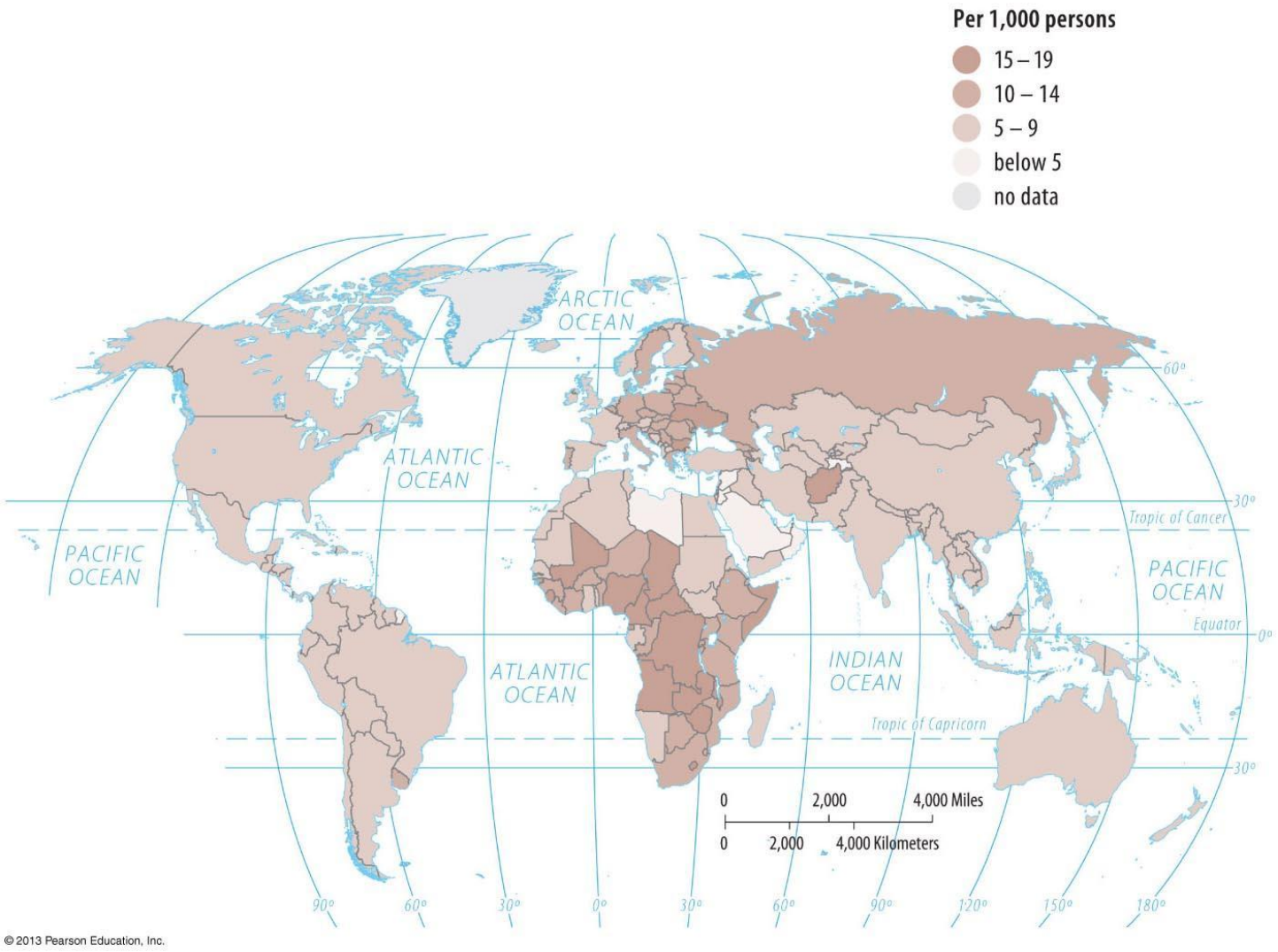
2.3 Components of Change

CRUDE DEATH RATE



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2.3 Components of Change

- NIR = (CBR – CDR)/10

*So, figure out the following:

Country	CBR	CDR	NIR
X	40	15	?
Y	20	9	?
Z	10	6	?
A	45	35	?

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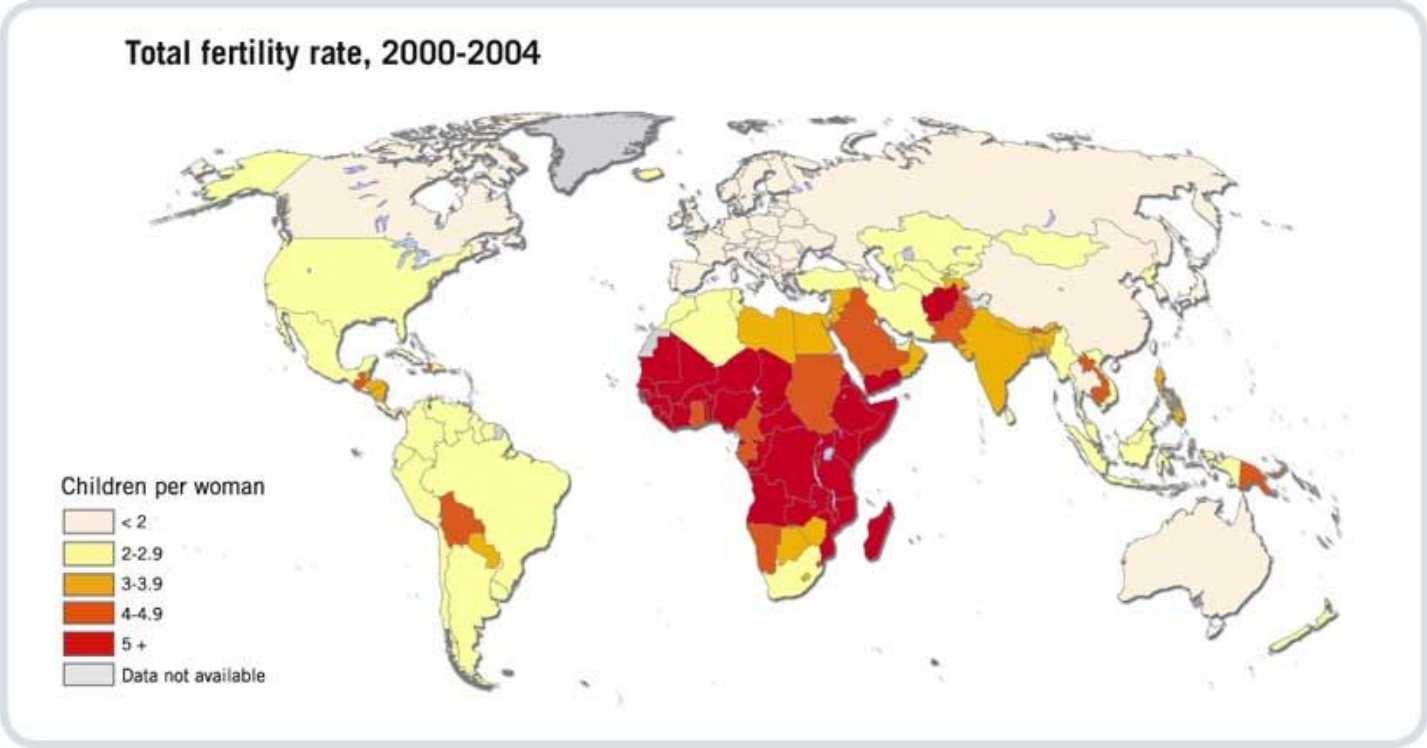
Learning Targets 2.4:

- Explain how changes in total fertility rates, infant mortality rates, and life expectancy affect population structure.
- Define dependency ratio and describe how a population pyramid can be used to study population structures.

2.4 Population Structure

- ***Total Fertility Rate (TFR)**
  - Average number of children a woman will have throughout her childbearing years
    - Future behavior predictor



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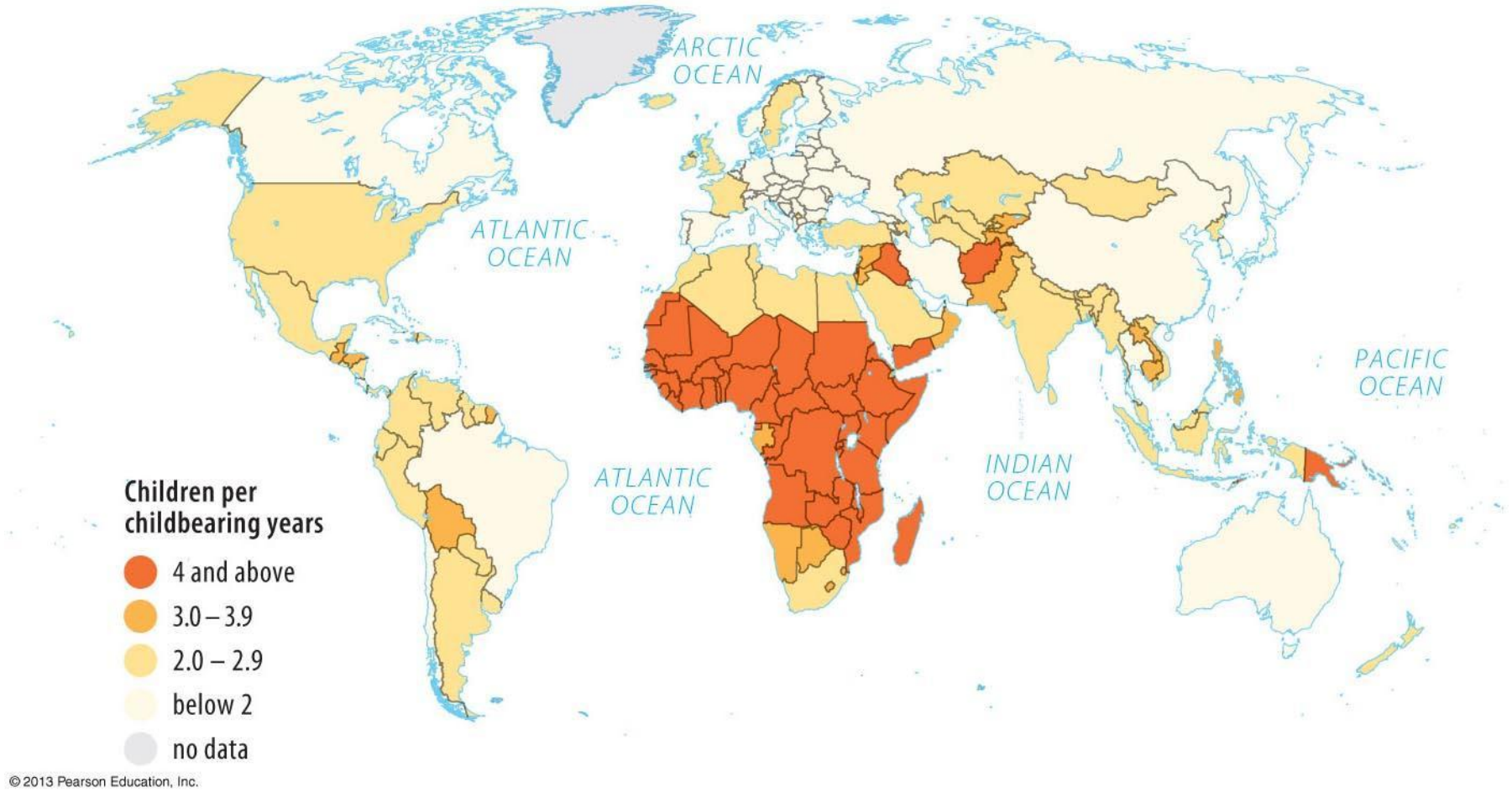
2.4 Population Structure

TOTAL FERTILITY RATE



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2.4 Population Structure

- **Infant Mortality Rate (IMR)**
  - Annual number of deaths of infants under 1 year of age, compared with live births
    - Health care access indicator

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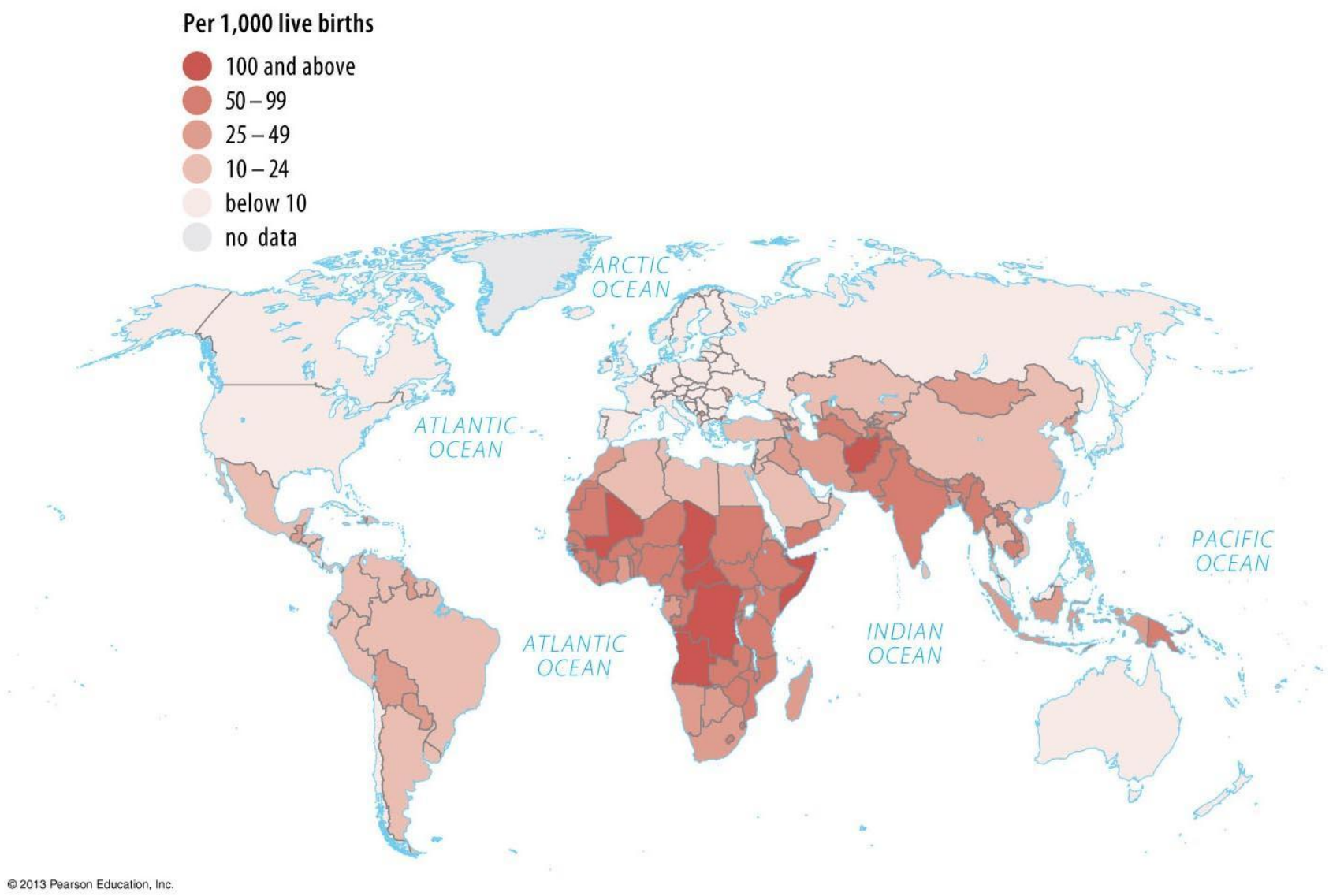
2.4 Population Structure

INFANT MORTALITY RATE



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2.4 Population Structure

- **Life expectancy**
  - Number of years a newborn infant can expect to live, assuming current mortality levels
    - Health care access and wealth indicator

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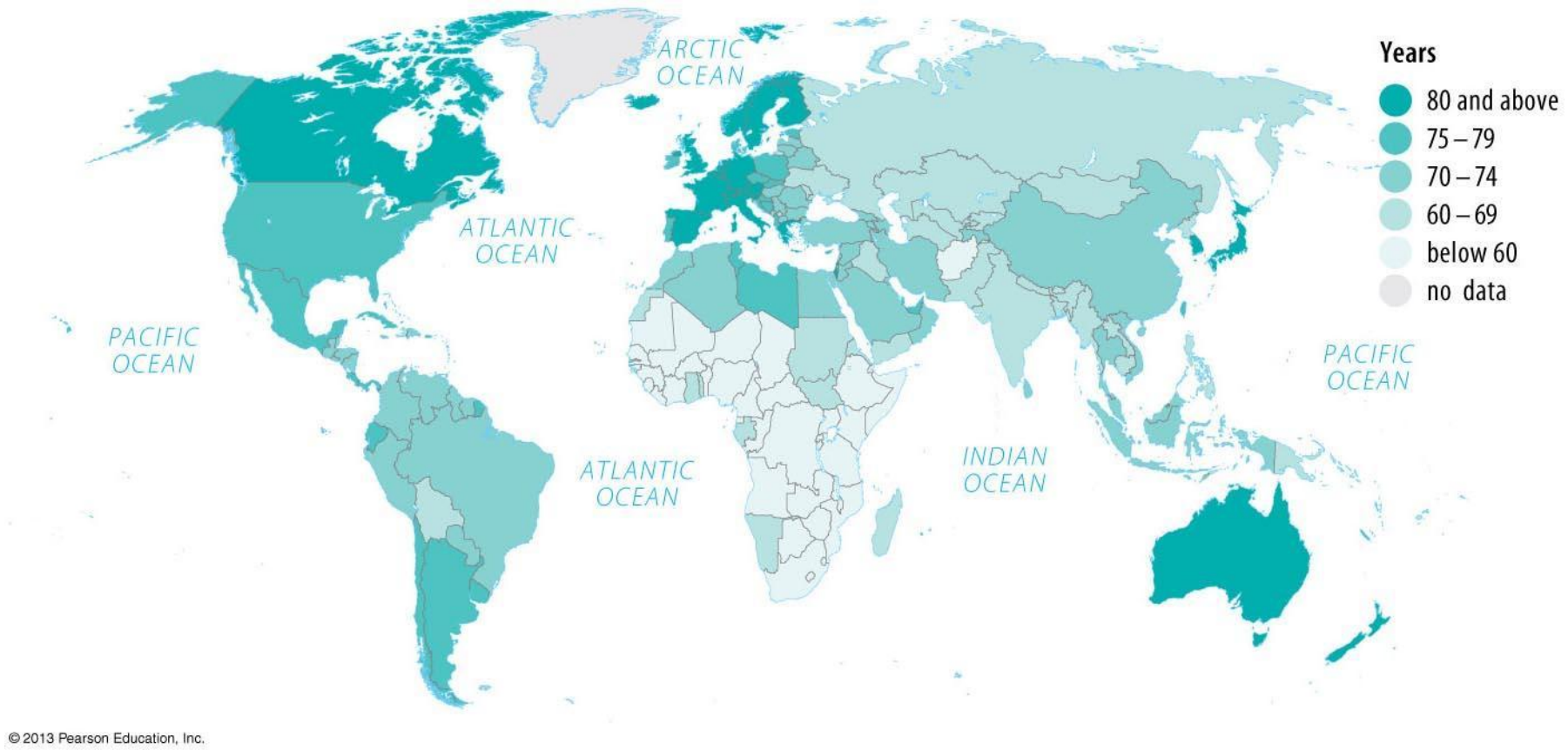
2.4 Population Structure

LIFE EXPECTANCY AT BIRTH



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2.4 Population Structure

- **Young and old**
- ***Dependency ratio**
  - Number of people who are too young or too old to work, compared to the number of people in their productive years
  - Indicates financial burden on a society's productive population

*To calculate the dependency ratio, one must know all of a country's population **under age 15 and over age 64**

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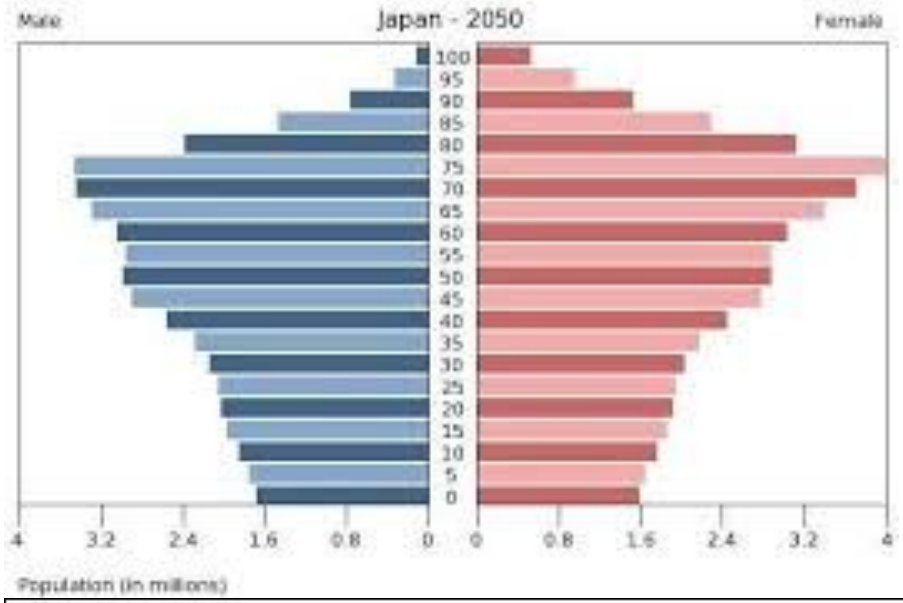
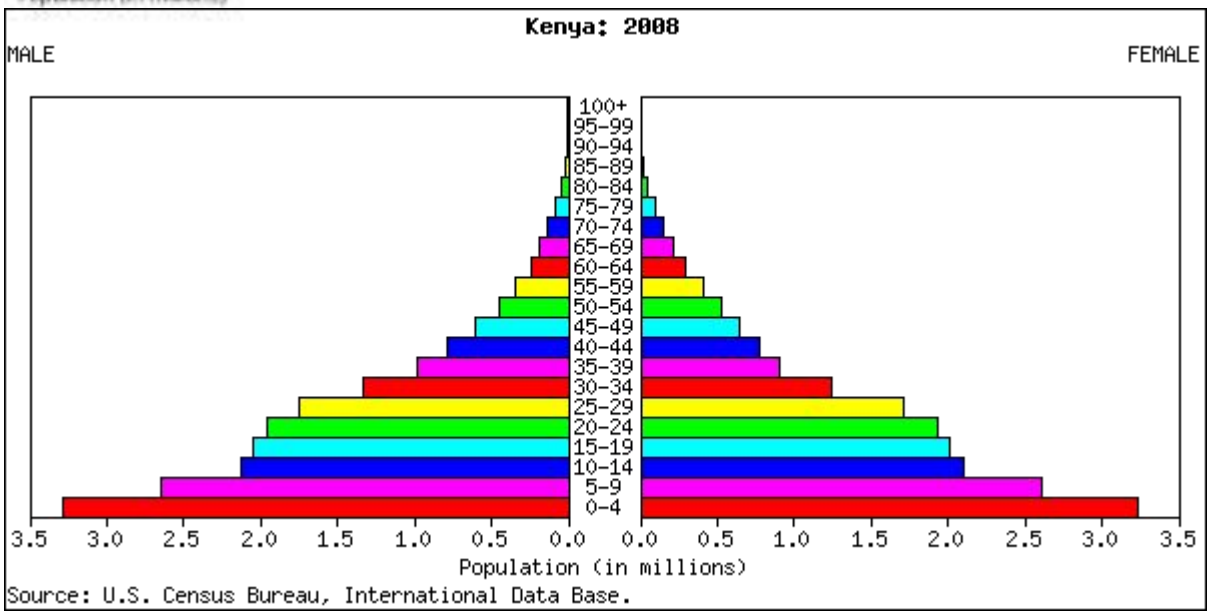
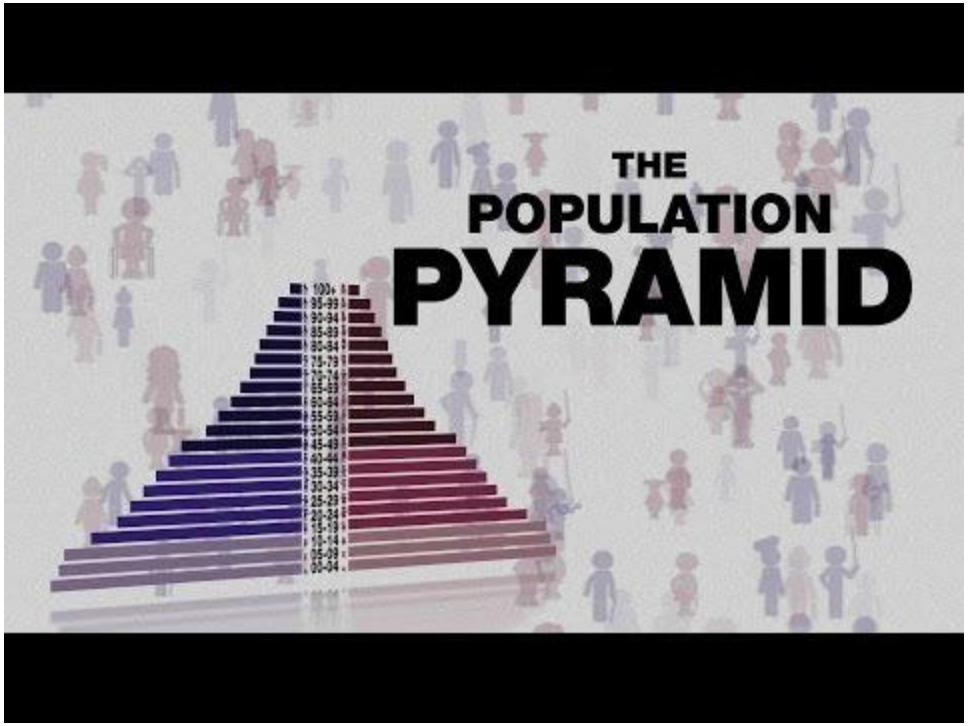
Population Structure



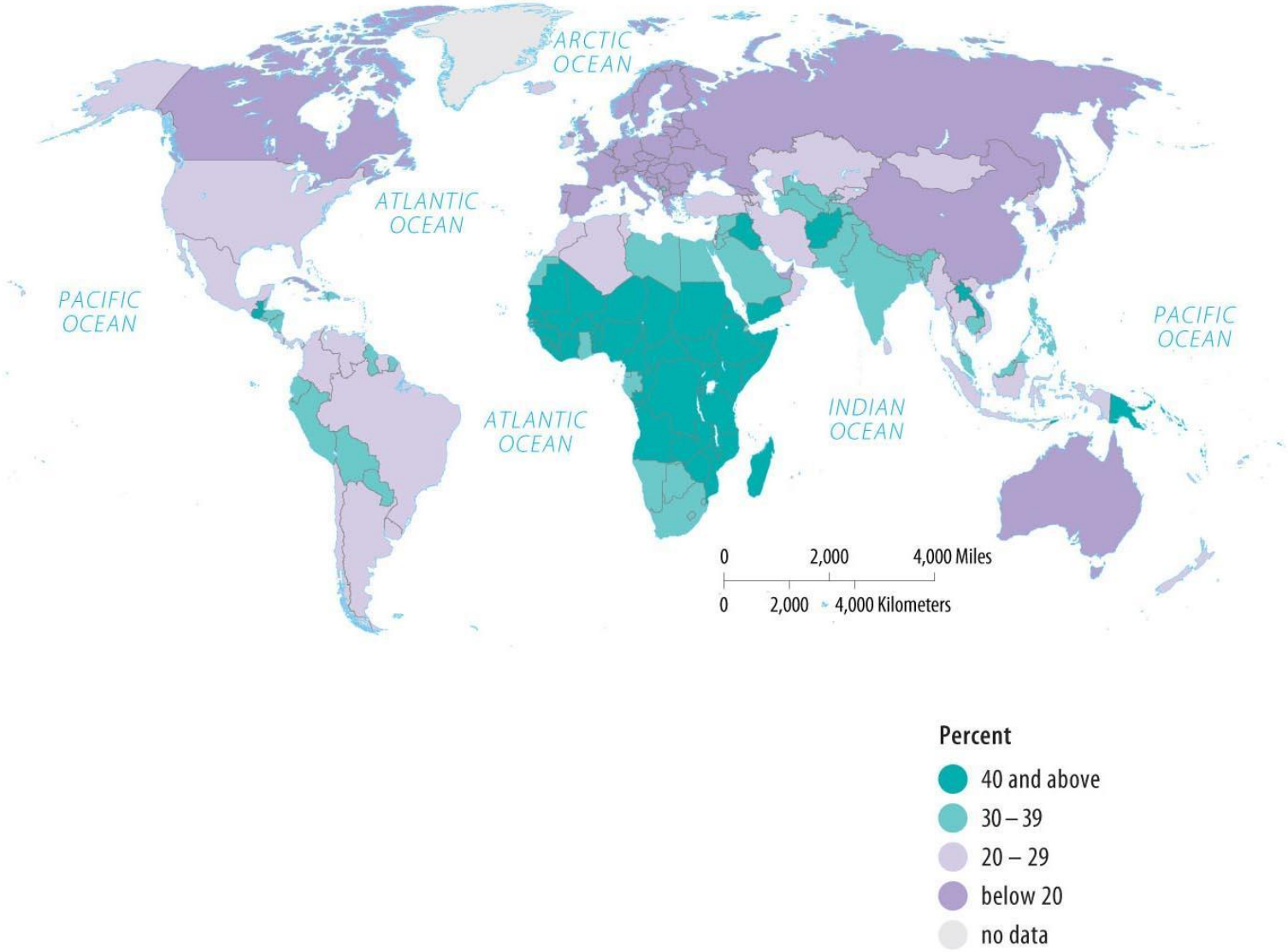


TED - Population Pyramids



2.4 Population Structure

POPULATION UNDER AGE 15



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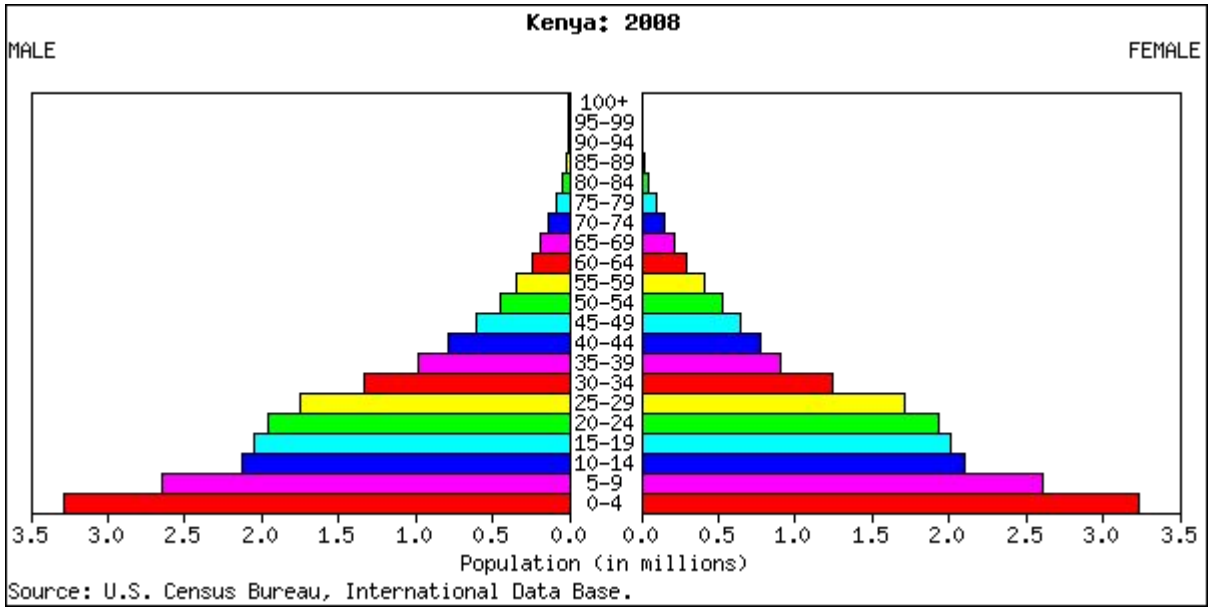
2.4 Population Structure

- **Population pyramid**
  - *Displays a country's population by **age and gender**



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2.4 Population Structure

POPULATION PYRAMID OF THE UNITED STATES

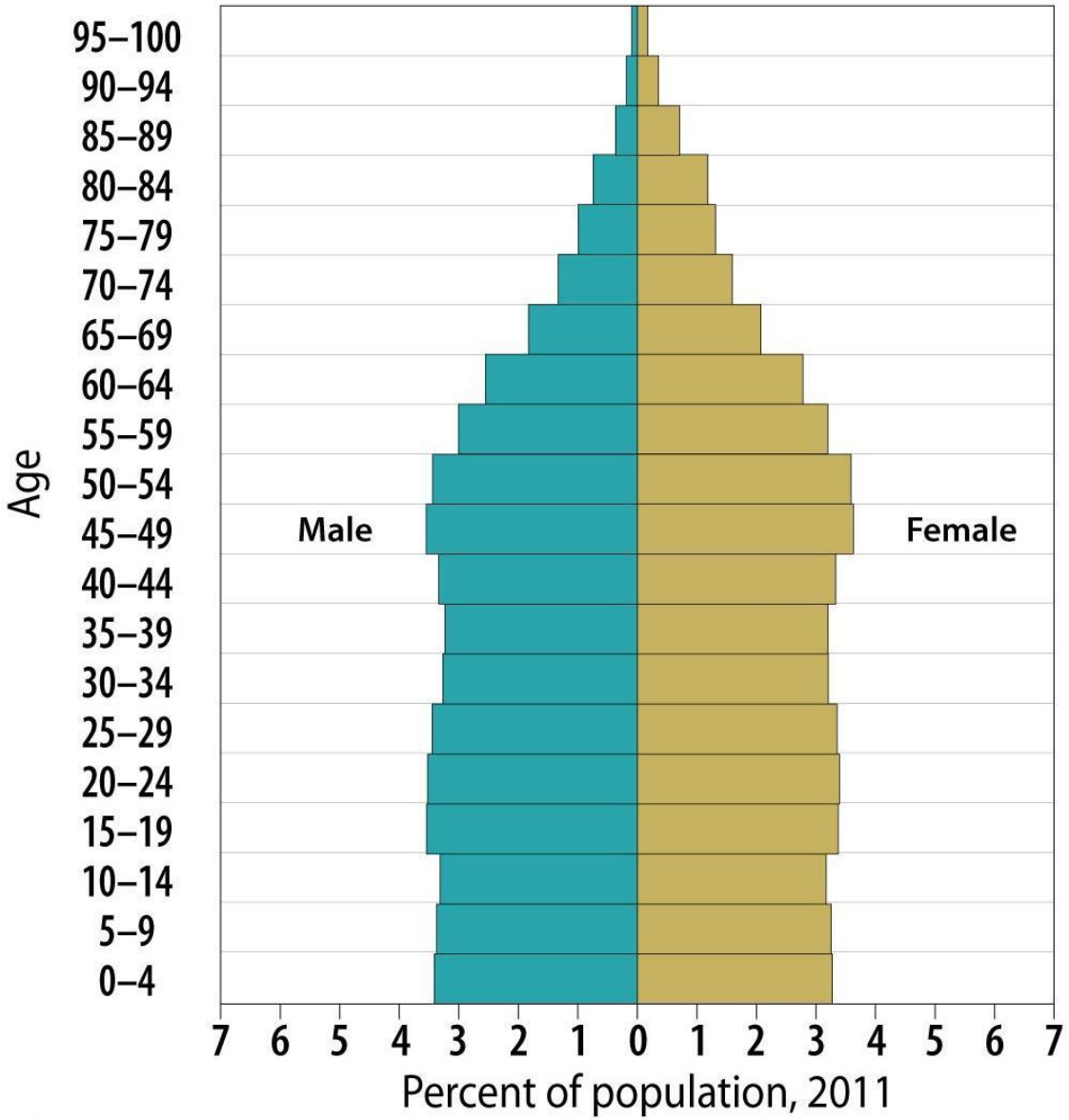
*Practice:

a. How many females are there in the 50-54 range?

b. Are there more 15-19 year old males or 60-64 year old males?

a. about 3.5% of total population

b. 15-19 year old males



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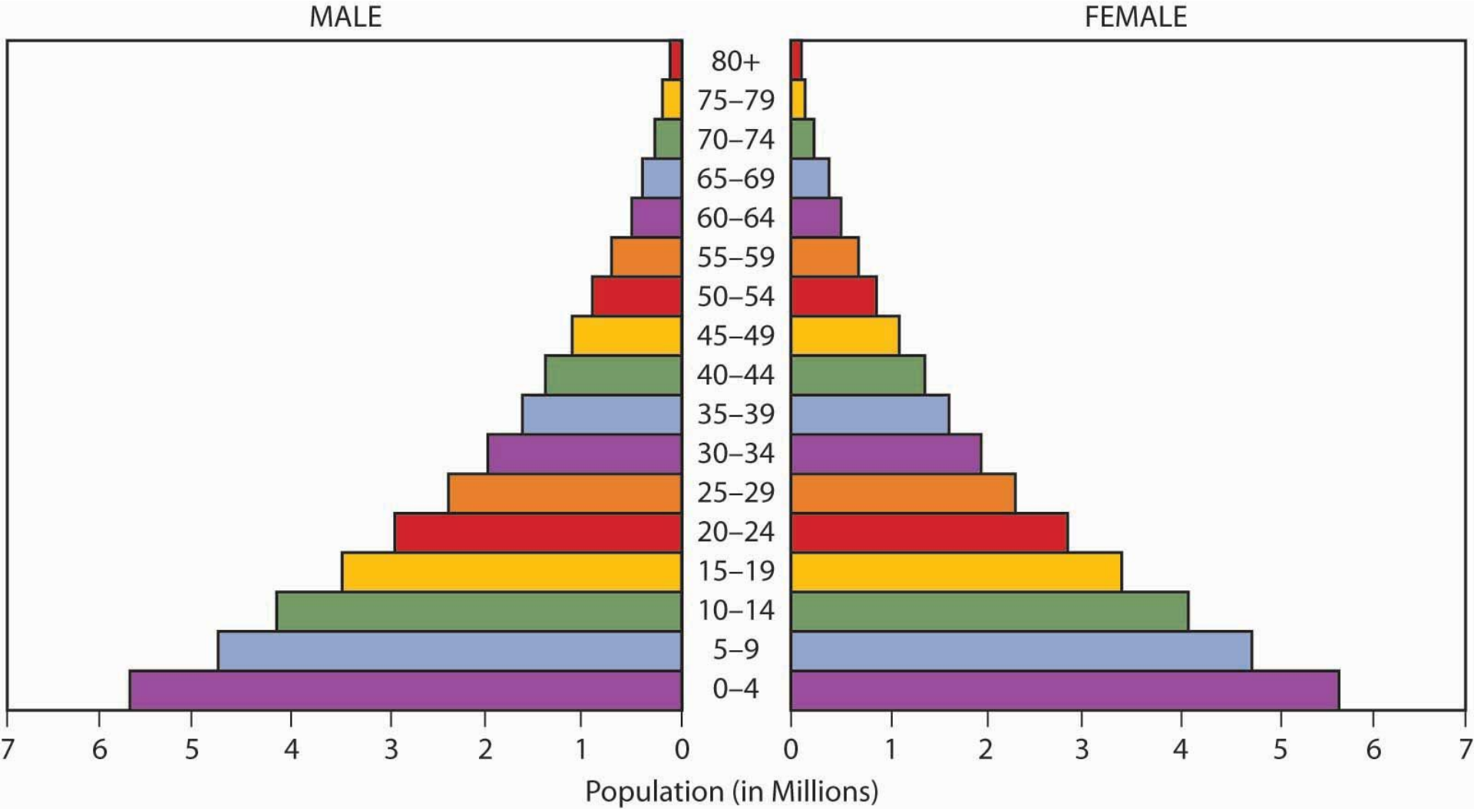
2.4 Population Structure

Population Pyramid of Ethipoia, 2000



*How many 20-24 year old males were there in Ethiopia in 2000?

about 3 million

Hans Rosling - 200 Countries in 4 Minutes

Learning Target 2.5:

- Explain the stages of demographic transition.

2.5 The Demographic Transition

- **Demographic transition**
  - Process of change in a country's population
  - Every country is in one of the *four stages* of the demographic transition

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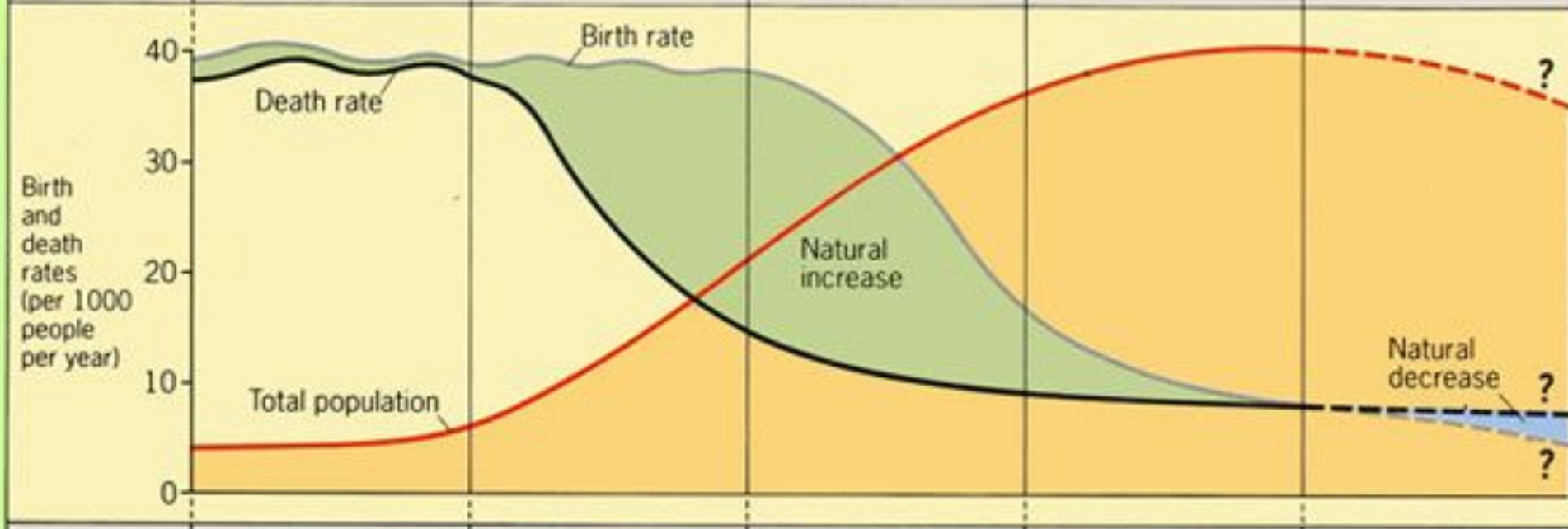
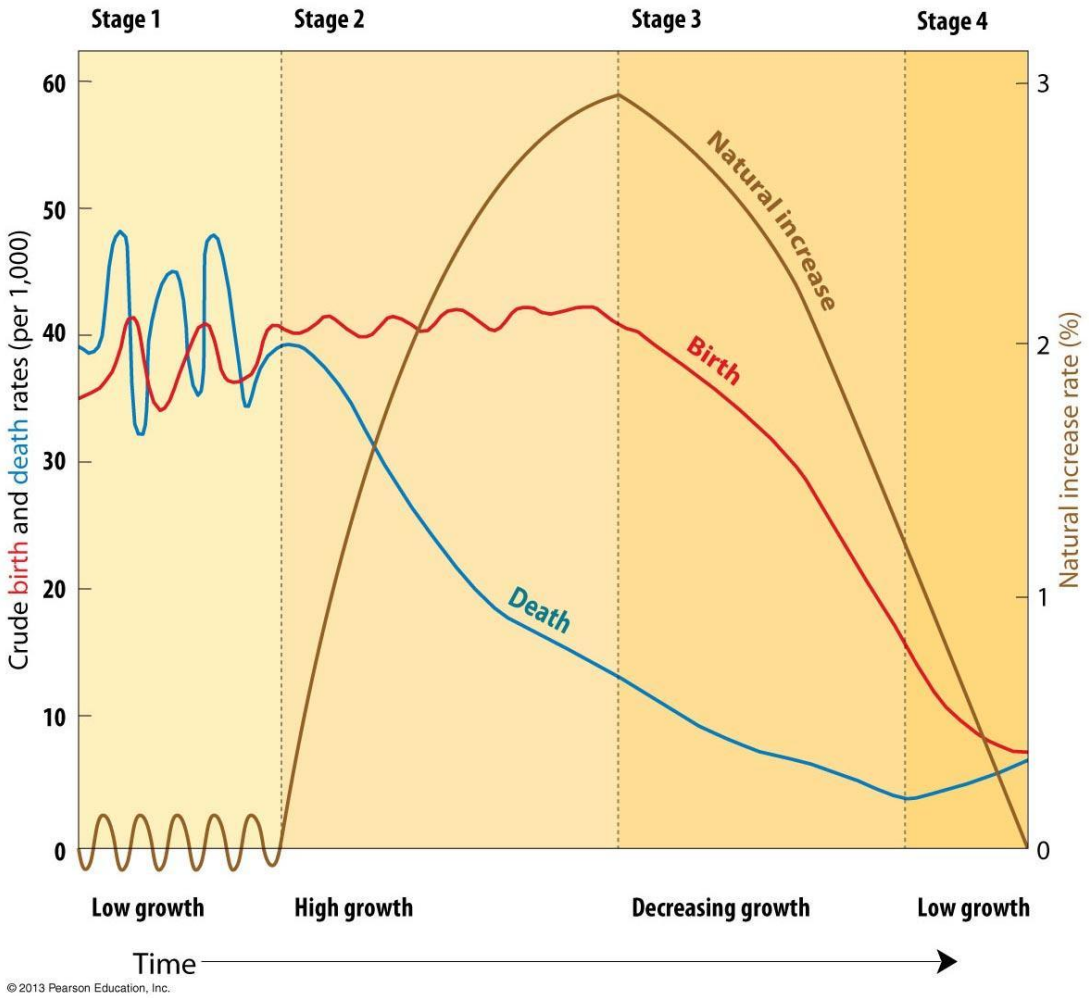
Stage	1 High stationary	2 Early expanding	3 Late expanding	4 Low stationary	5? Declining?



Examples	A few remote groups	Egypt, Kenya, India	Brazil	USA, Japan France, UK	Germany
Birth rate	High	High	Falling	Low	Very low
Death rate	High	Falls rapidly	Falls more slowly	Low	Low
Natural increase	Stable or slow increase	Very rapid increase	Increase slows down	Stable or slow increase	Slow decrease
Reasons for changes in birth rate	Many children needed for farming. Many children die at an early age. Religious/social encouragement. No family planning.		Improved medical care and diet. Fewer children needed.	Family planning. Good health. Improving status of women. Later marriages.	
Reasons for changes in death rate	Disease, famine. Poor medical knowledge so many children die.	Improvements in medical care, water supply and sanitation. Fewer children die.		Good health care. Reliable food supply.	

2.5 The Demographic Transition

*Put this graph into your notebooks



DEMOGRAPHIC TRANSITION

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2.5 The Demographic Transition

Stage 1

- Very high CBR
- Very high CDR
- ***Very low NIR**
- most of human history in Stage 1
- no country in Stage 1 today
  - although some small societies (Amazon, Papua/New Guinea)
- very low NIR

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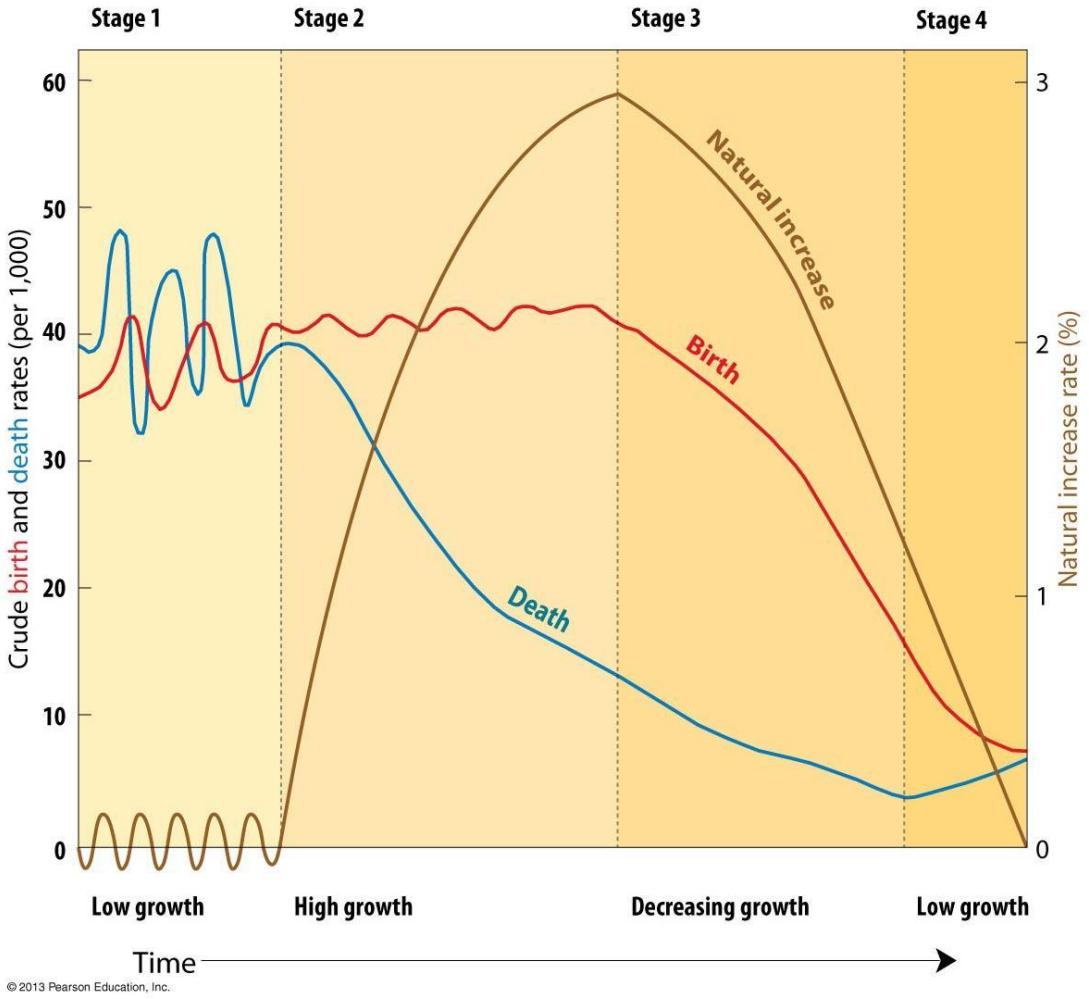
2.5 The Demographic Transition



DEMOGRAPHIC TRANSITION

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2.5 The Demographic Transition

Stage 2

- High CBR
- Rapidly declining CDR
- ***Very high growth / rapid NIR**
- 'developing countries'
- infectious diseases brought under control by penicillin, vaccines, and other medicines lower death rates while birth rates remain high causing high NIR

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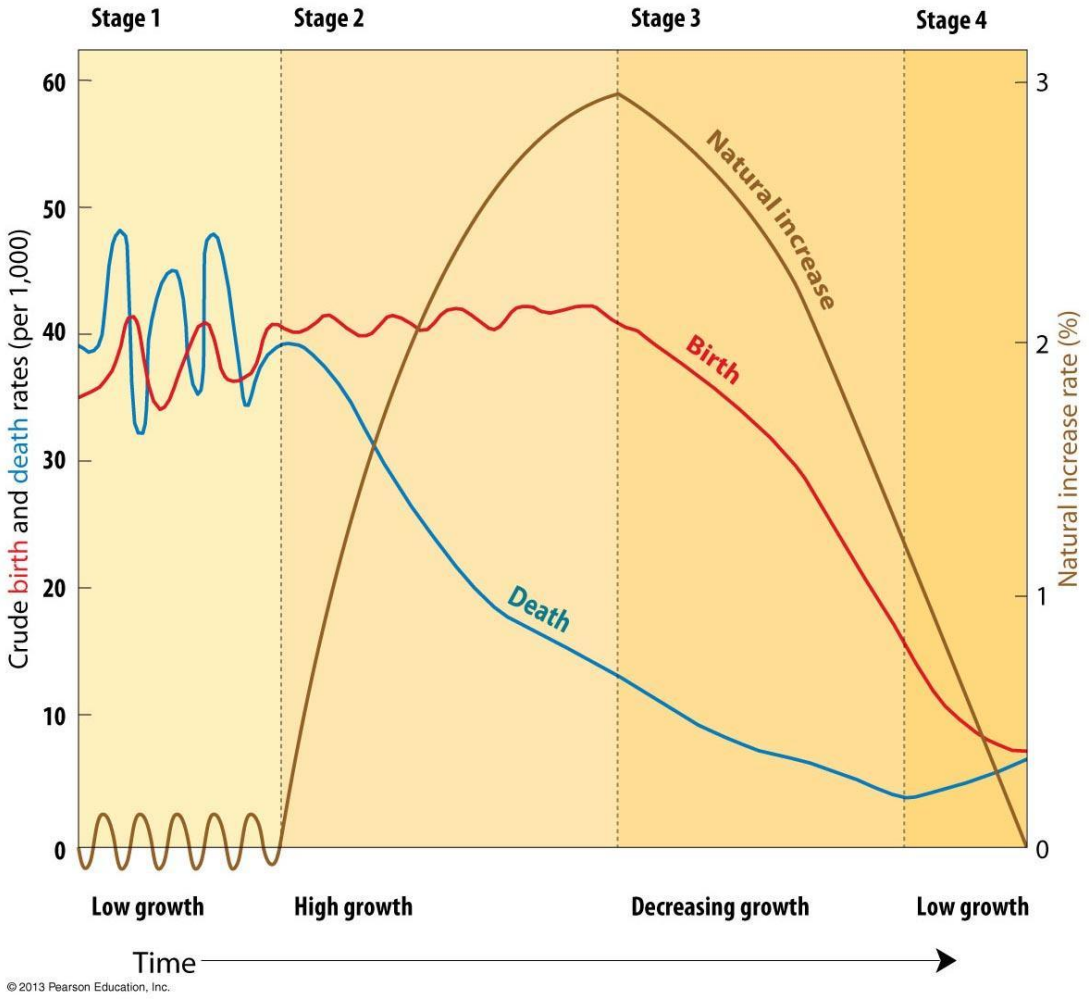
2.5 The Demographic Transition



DEMOGRAPHIC TRANSITION

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2.5 The Demographic Transition

Stage 3

- Rapidly declining CBR
- Moderately declining CDR
- ***Moderate growth / increasing NIR**
- people choose to have fewer children which lowers birth rates and slows NIR
  - economic reasons
  - government encouragement

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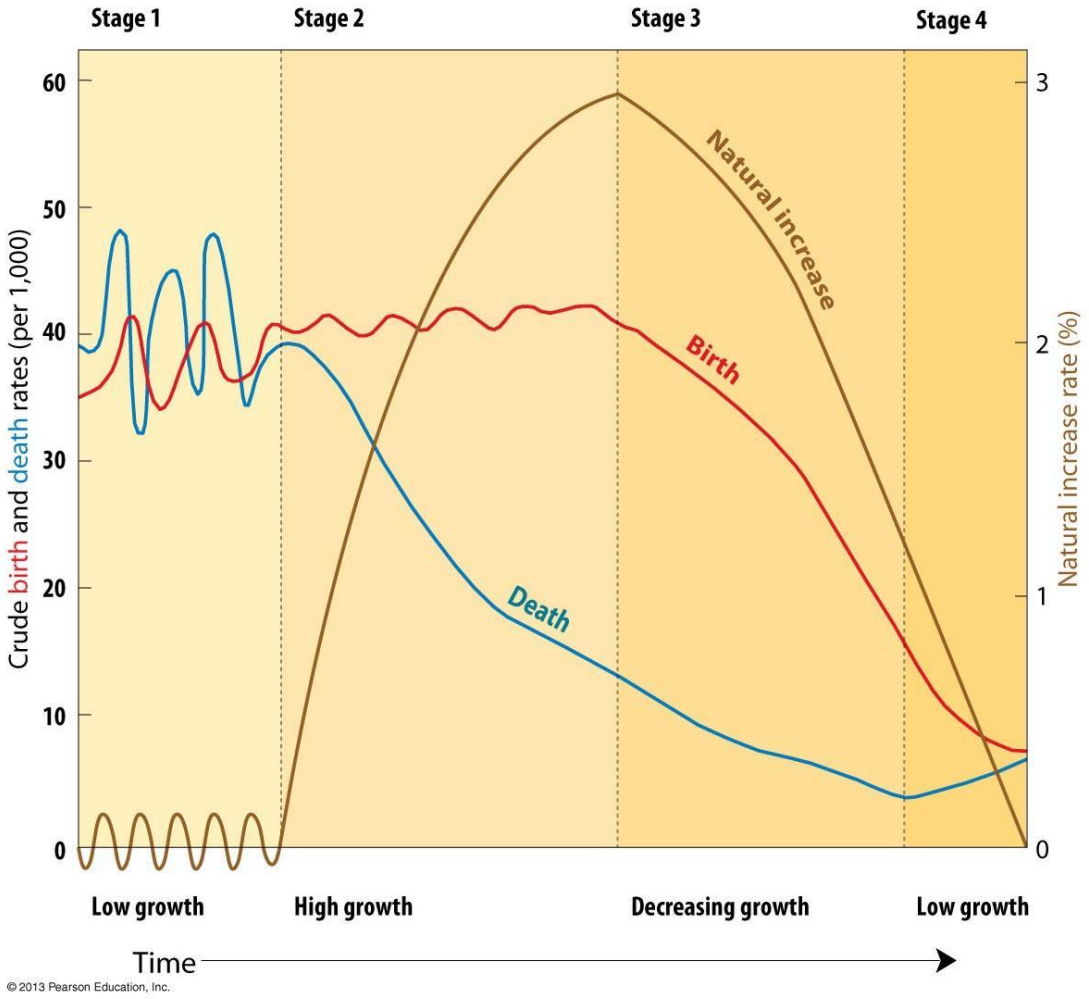
2.5 The Demographic Transition



DEMOGRAPHIC TRANSITION

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2.5 The Demographic Transition

Stage 4

- Very low CBR
- Low, slightly increasing CDR
- ***Zero or negative NIR - very slow growth**
- ***Includes the Developed Countries (MDCs)**
- Continued low death rates and lowering birth rates cause low growth...possibly negative growth
  - more women getting educated and working rather than staying ‘in the home’
  - more available contraceptives
  - children become an economic liability rather than an asset

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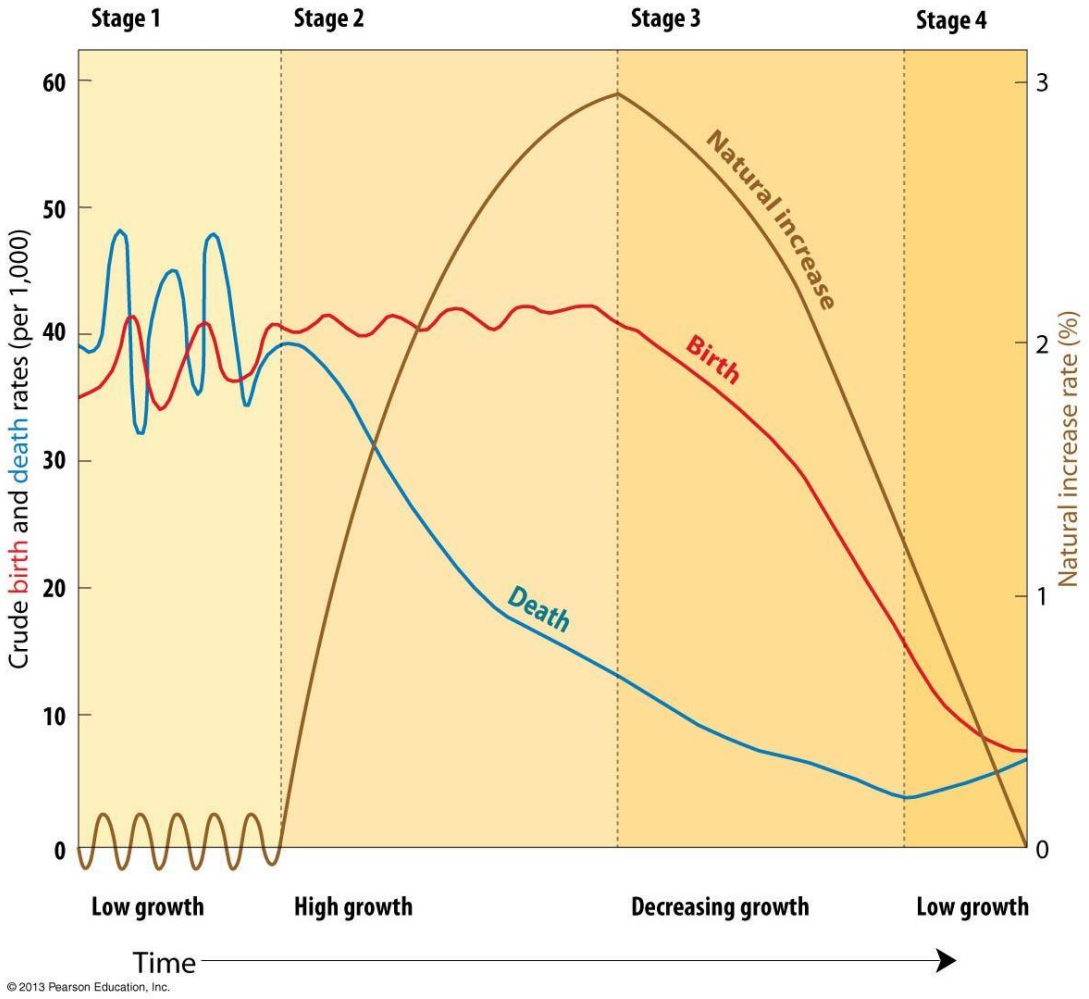
2.5 The Demographic Transition



DEMOGRAPHIC TRANSITION

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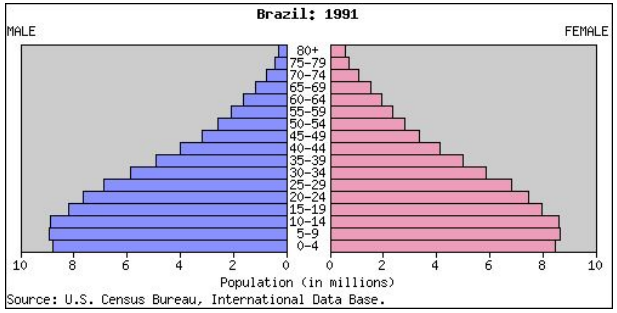
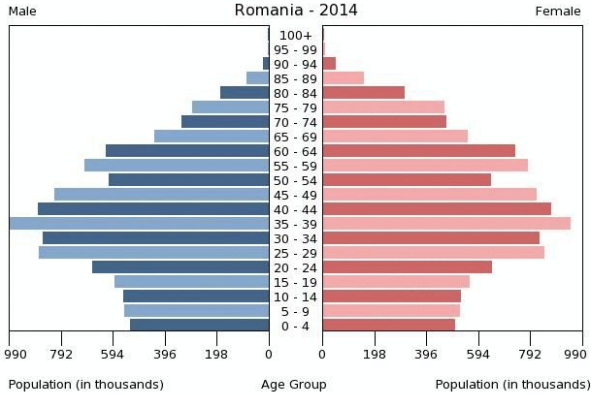
Using Population Pyramids and the DTM

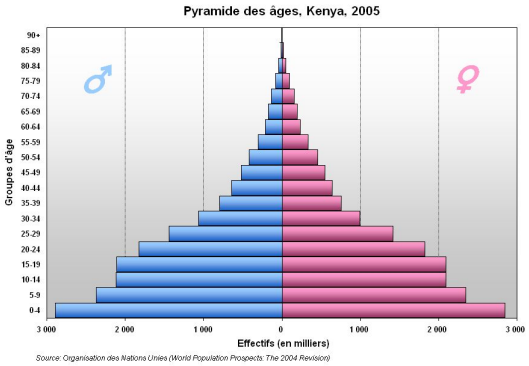
*For each of the following population pyramids, determine if it is Stage II (Very rapid growth), Stage III (Moderate growth), or Stage IV (very slow or negative growth)



Stage III (notice date)



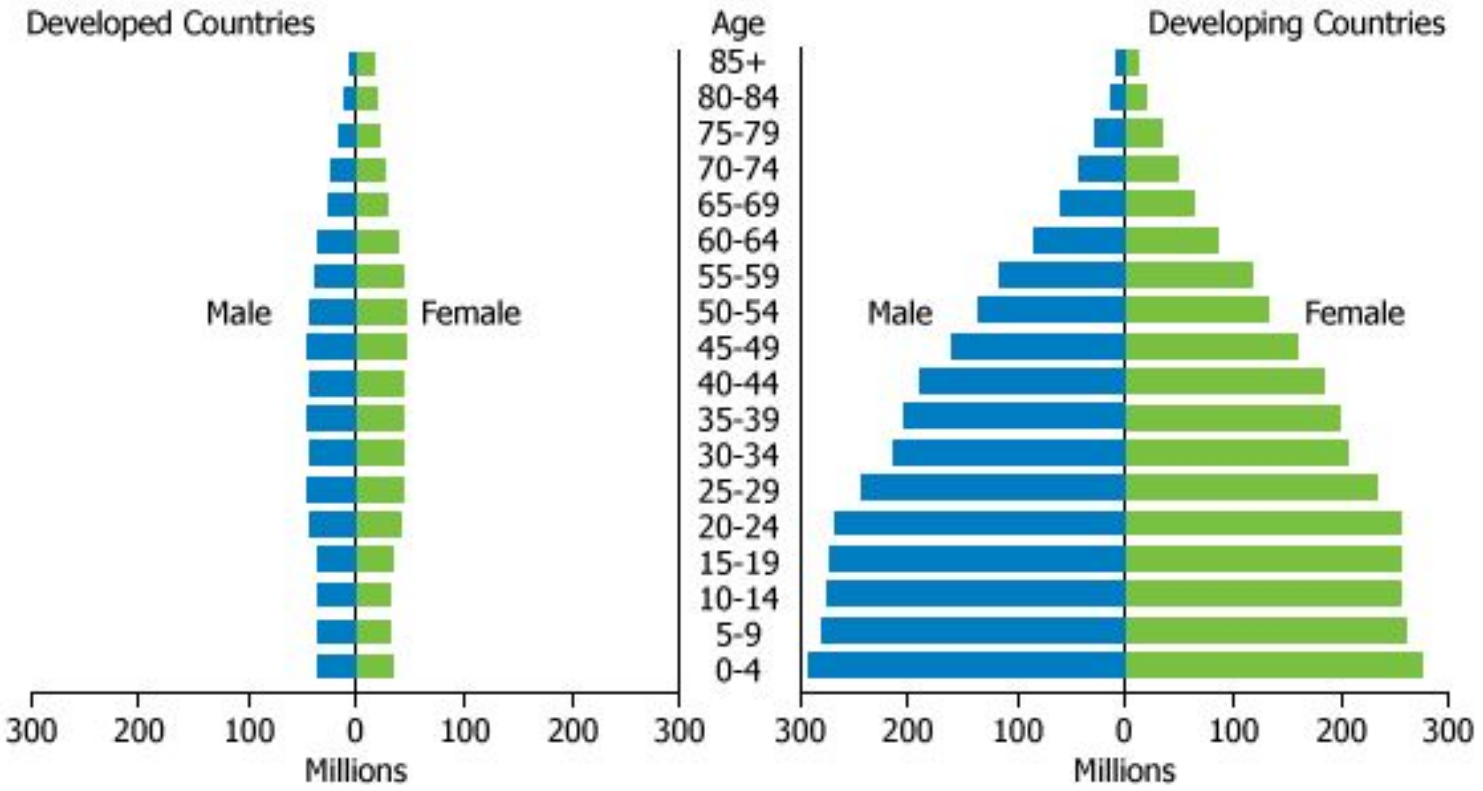
Stage IV



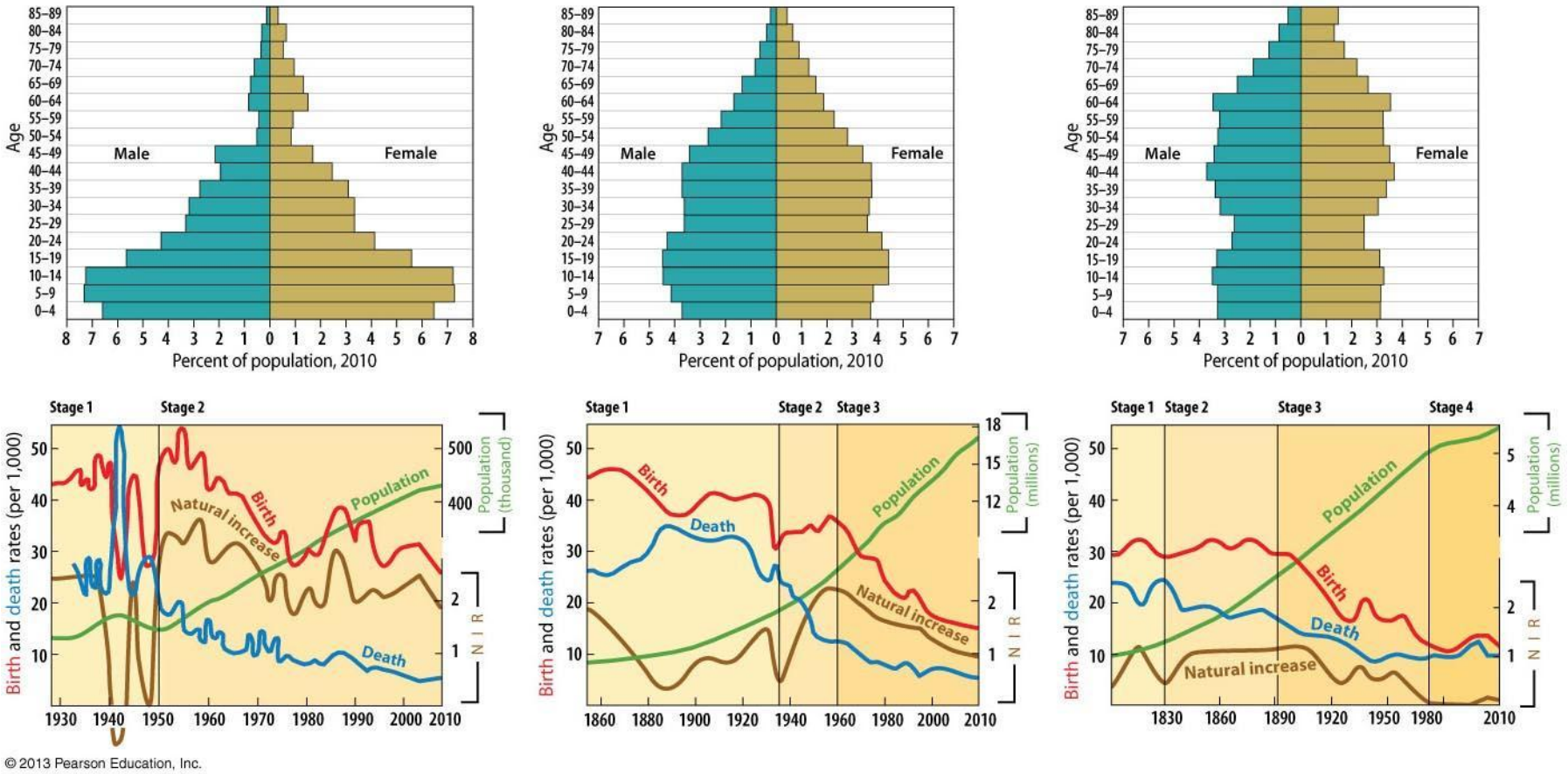
Stage II

The Demographic Transition

*The most rapid population growth is occurring in the Developing Countries (LDCs)



2.5 The Demographic Transition



POPULATION PYRAMID AND DEMOGRAPHIC TRANSITION FOR CAPE VERDE (LEFT), CHILE (CENTER), DENMARK (RIGHT)

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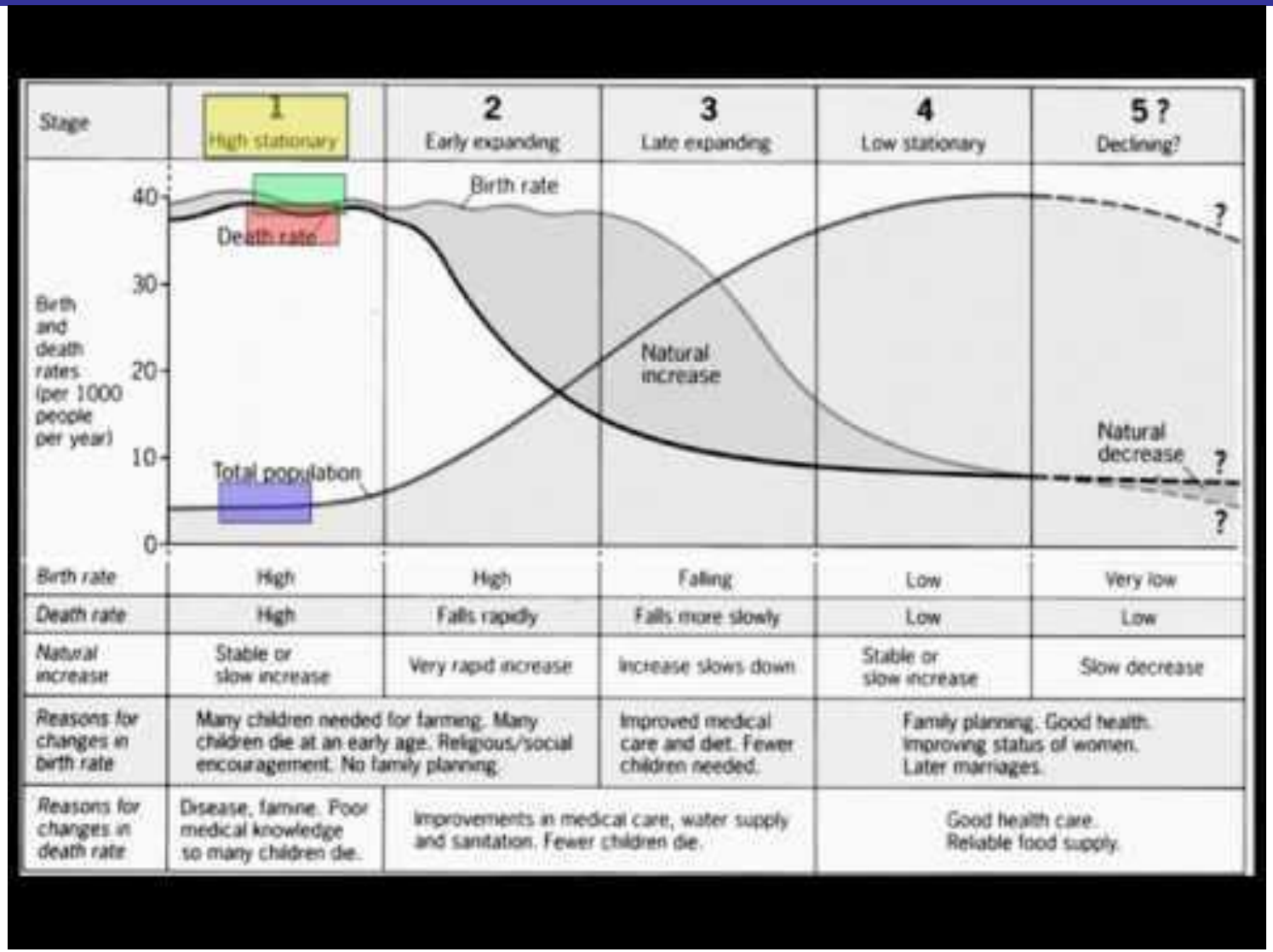
Video - The Demographic Transition Model and Population Pyramids in Geography (6:00)



Learning Target 2.6:

- Give examples of how some developing countries have lowered birth rates.

2.6 - Declining Birth Rates - World In the Balance video

2.6 Declining Birth Rates

- **Population has been increasing at a slower rate since the mid-twentieth century.**
  - Decline is mostly due to lower birth rates.

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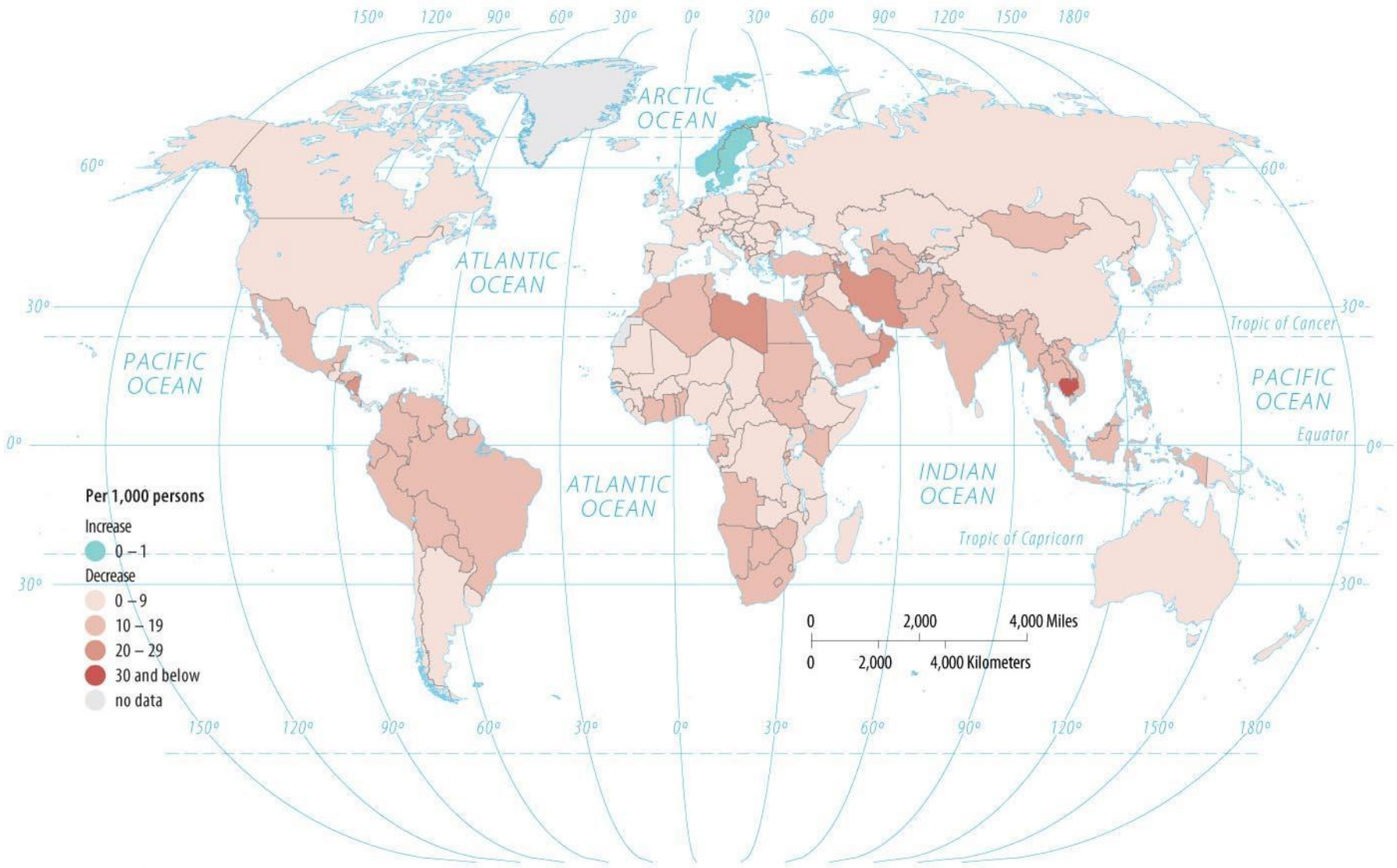
2.6 Declining Birth Rates

CRUDE BIRTH RATE CHANGE 1980–2010



2.6 Declining Birth Rates

***Three population reduction strategies:**

- 1. Education
- 2. Health care
- 3. Distribution of contraceptives

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2.6 Declining Birth Rates

- **Lowering birth rates through education and health care**
  - Improvement of economic conditions is key.
    - Wealthier communities have more to spend on education and health care.
    - More educated women have greater economic control over their lives.
    - More educated women better understand their reproductive rights, make more informed choices, and select more effective contraception.
    - Better health care leads to lower IMRs.
    - Lower IMRs lead to higher likelihood of contraception use.

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2.6 Declining Birth Rates

- **Lowering birth rates through contraception**
  - Rapidly, cheaply, and widely distributed contraception
    - A more rapid method than economic development
    - Family-planning programs can be used as well.

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2.6 Declining Birth Rates

- **Problematic regions:**
  - Bangladesh
    - Low levels of wealth and literacy

  In 1990, 6% of women in Bangladesh used contraceptives

  In 2010, 56% of women in Bangladesh used contraceptives

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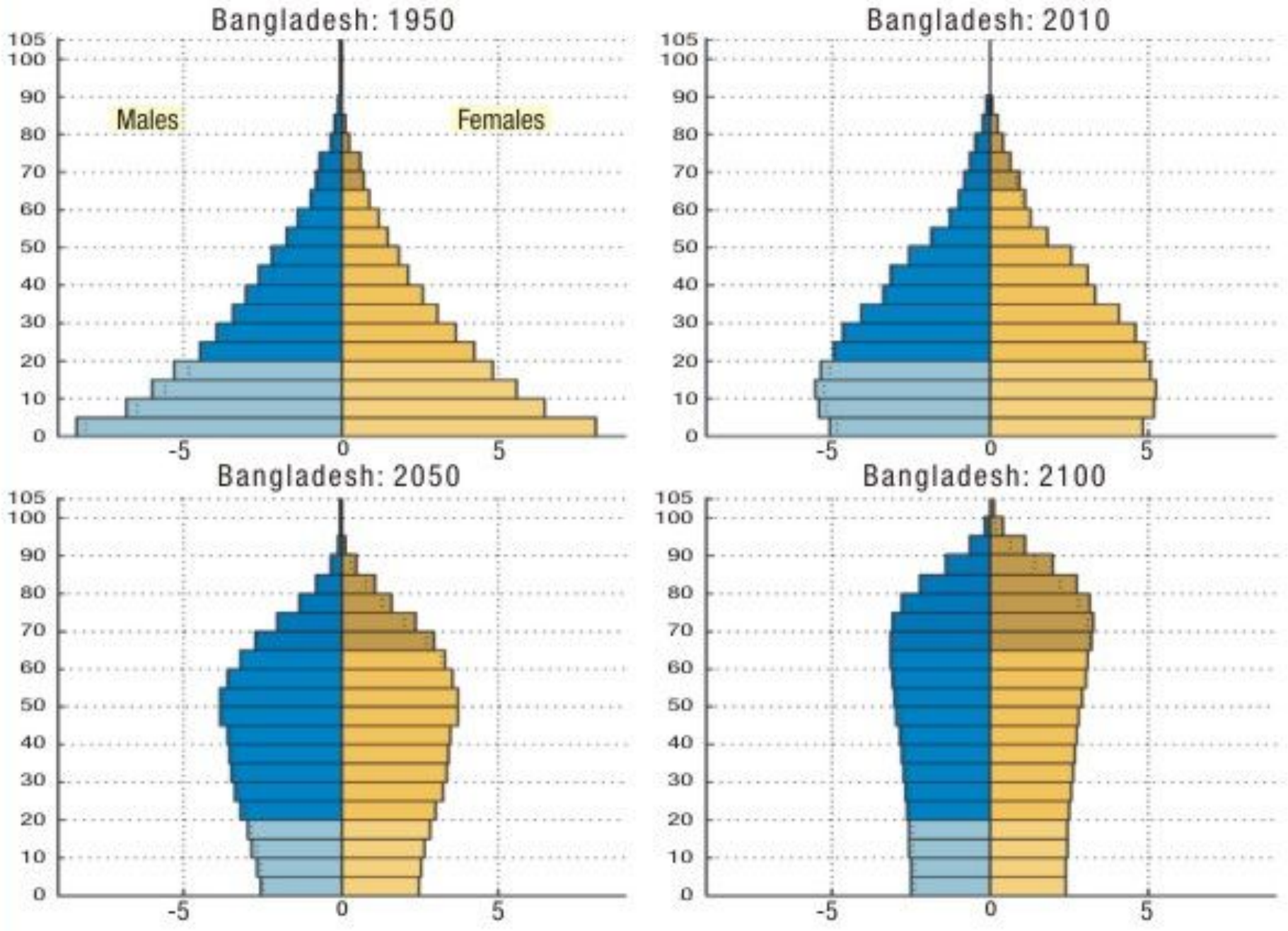
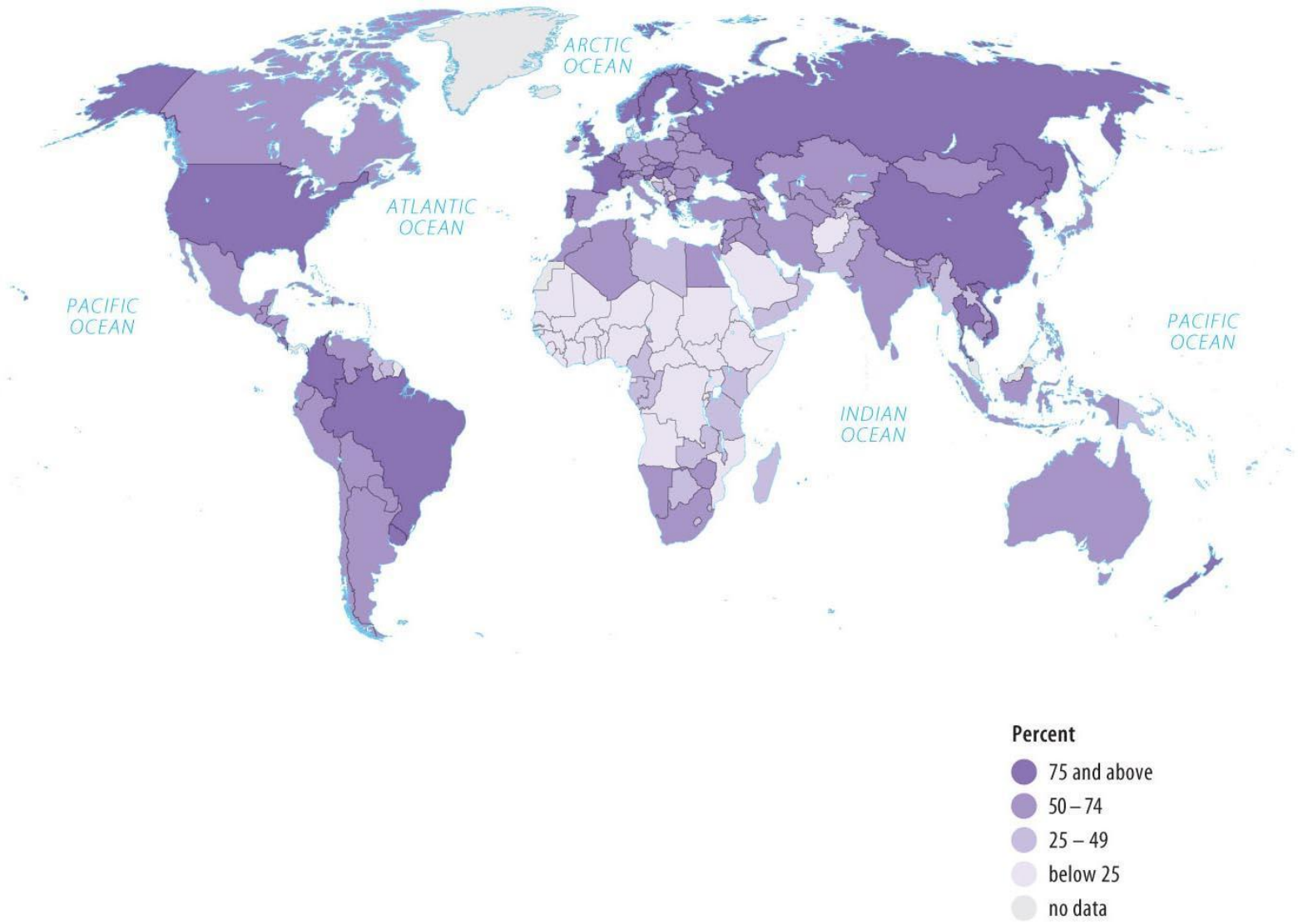

Bangladesh: 1950
Males
Females
Bangladesh: 2010
Bangladesh: 2050
Bangladesh: 2100
105
100
90
80
70
60
50
40
30
20
10
0
-5
0
5

2.6 Declining Birth Rates

WOMEN USING FAMILY PLANNING



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2.6 Declining Birth Rates

- **Problematic regions:**
  - Africa
    - Economics, religion, and low levels of education limit contraception use.

Currently:

About ¼ of African women use contraceptives

-about ¾ of Latin American women use contraceptives

-about ⅔ of Asian women use contraceptives

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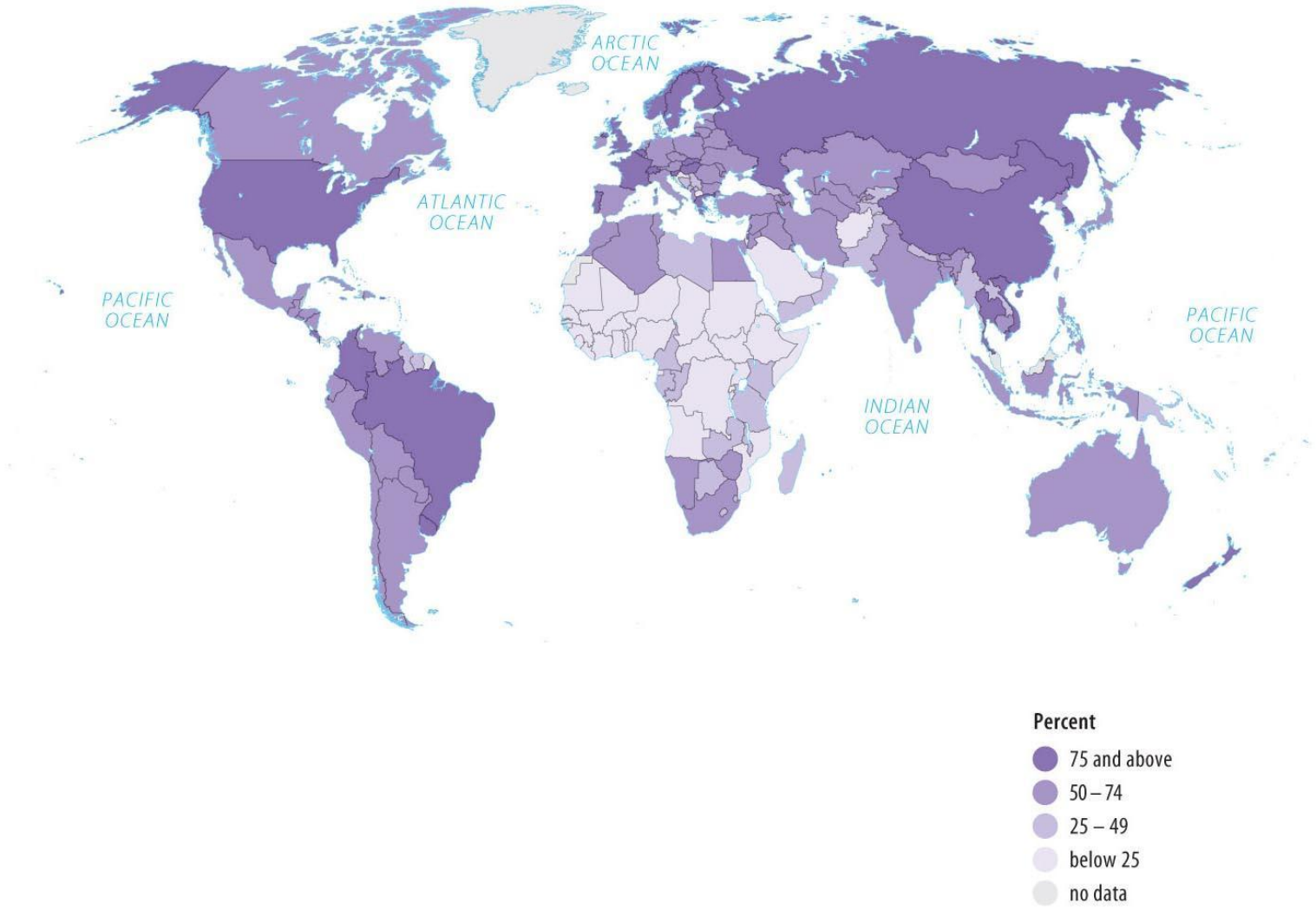
2.6 Declining Birth Rates

WOMEN USING FAMILY PLANNING



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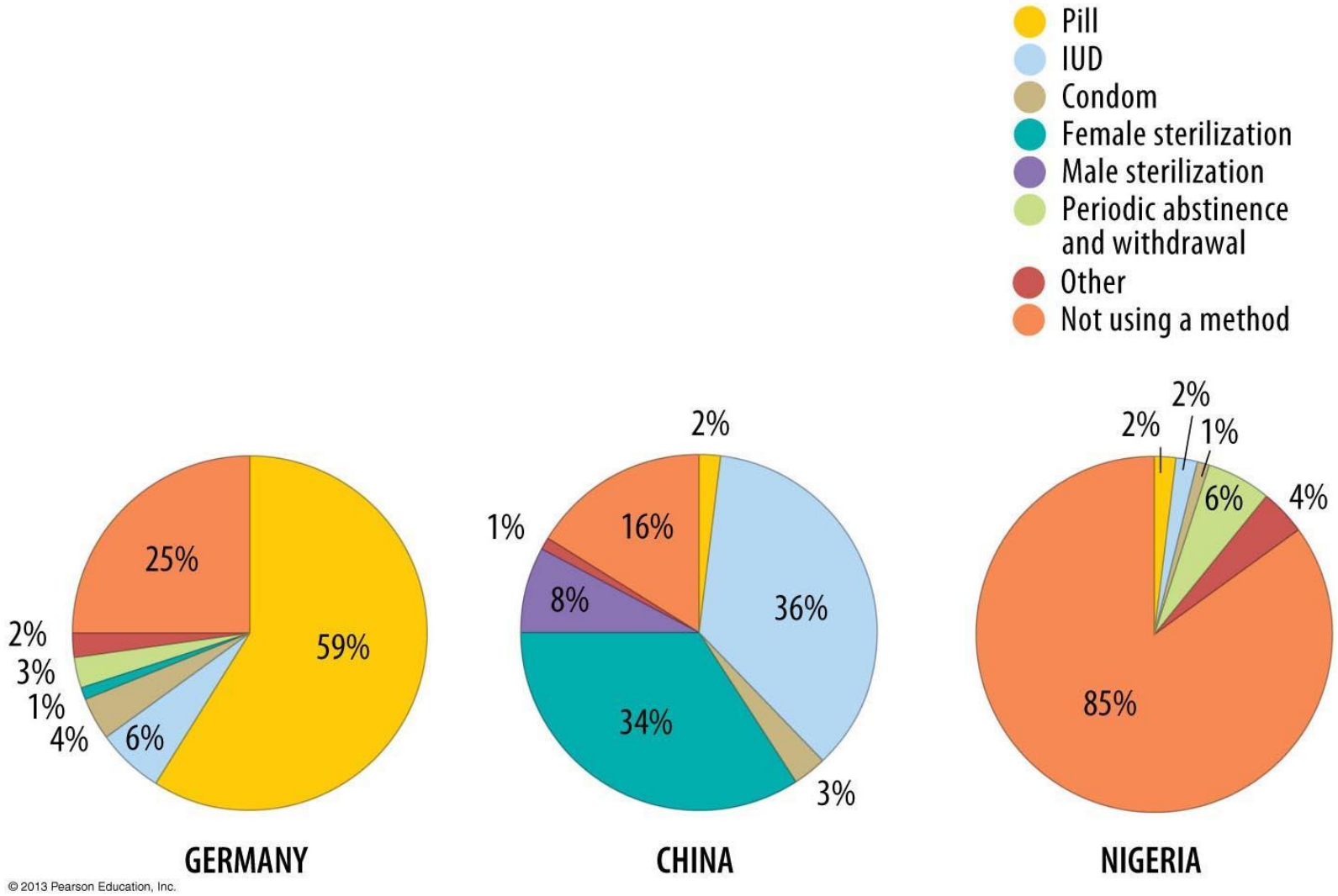
2.6 Declining Birth Rates

FAMILY PLANNING METHODS



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2.6 Declining Birth Rates

- **Problematic regions:**
  - Southwestern Asia
    - Low status of women limits contraception use.
      - Women have less access to education and hold fewer legal rights as compared to men.
      - Large families—male symbol of virility

***One effective approach to decreasing birth rates is the education of women**

-more freedom for women allows them to choose to have fewer babies, continue education programming, and pursue careers

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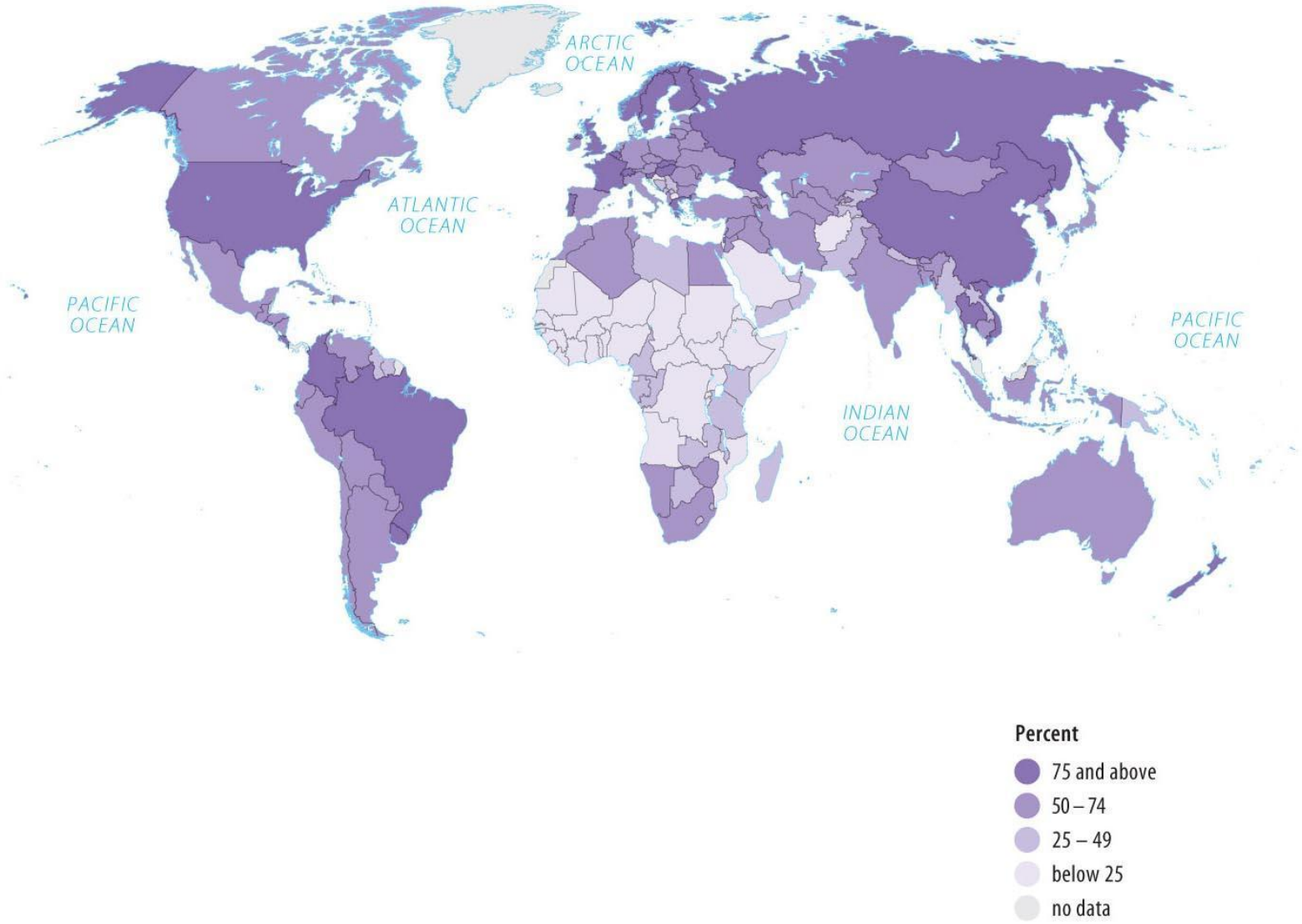
2.6 Declining Birth Rates

WOMEN USING FAMILY PLANNING



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2.6 Declining Birth Rates

*One important obstacle to declining birth rates is that there is religious opposition to some effective birth control methods

2.6 - Declining Birth Rates - Practice Question

***In Developing Countries (LDCs) today, the main reason for declining birth rates is:**

a. government policies
b. women are having more babies
c. religious tolerance
d. women are having fewer babies

d - women are having fewer babies

2.6 - Declining Birth Rates

Article: Italy Is A Dying Country According To Their Own Prime Minister

Article at this link:

http://www.theguardian.com/world/2015/feb/13/italy-is-a-dying-country-says-minister-as-birth-rate-plummets

Learning Targets 2.7

- Explain the components of future population growth and the elderly support ratio.
- Describe the possible stage 5 of demographic transition.

2.7 Population Futures

- **World population will still increase, but at a slower rate than in the past.**
- **Components of future population growth**
  - Fertility is the primary determinant.

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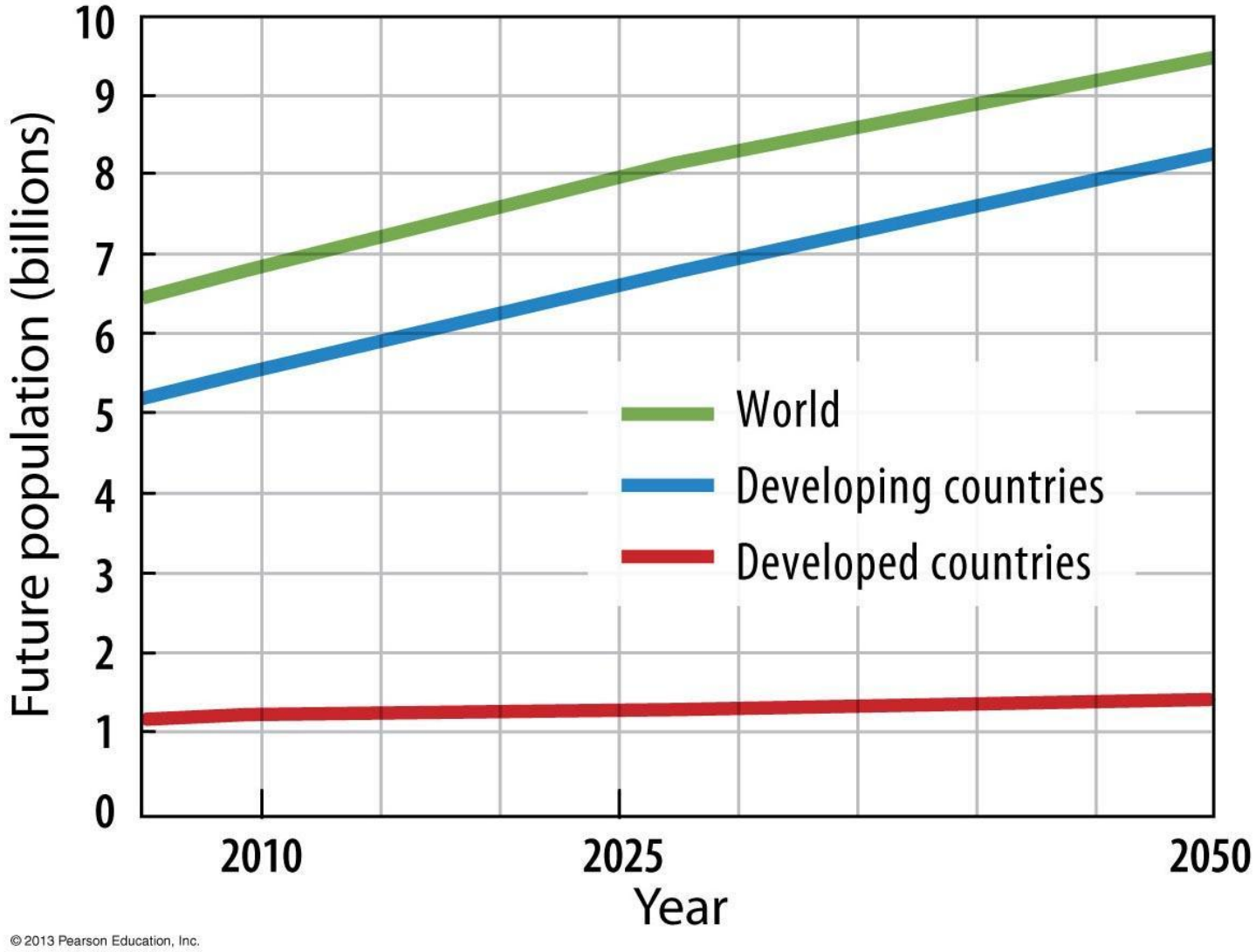
2.7 Population Futures

FUTURE POPULATION GROWTH



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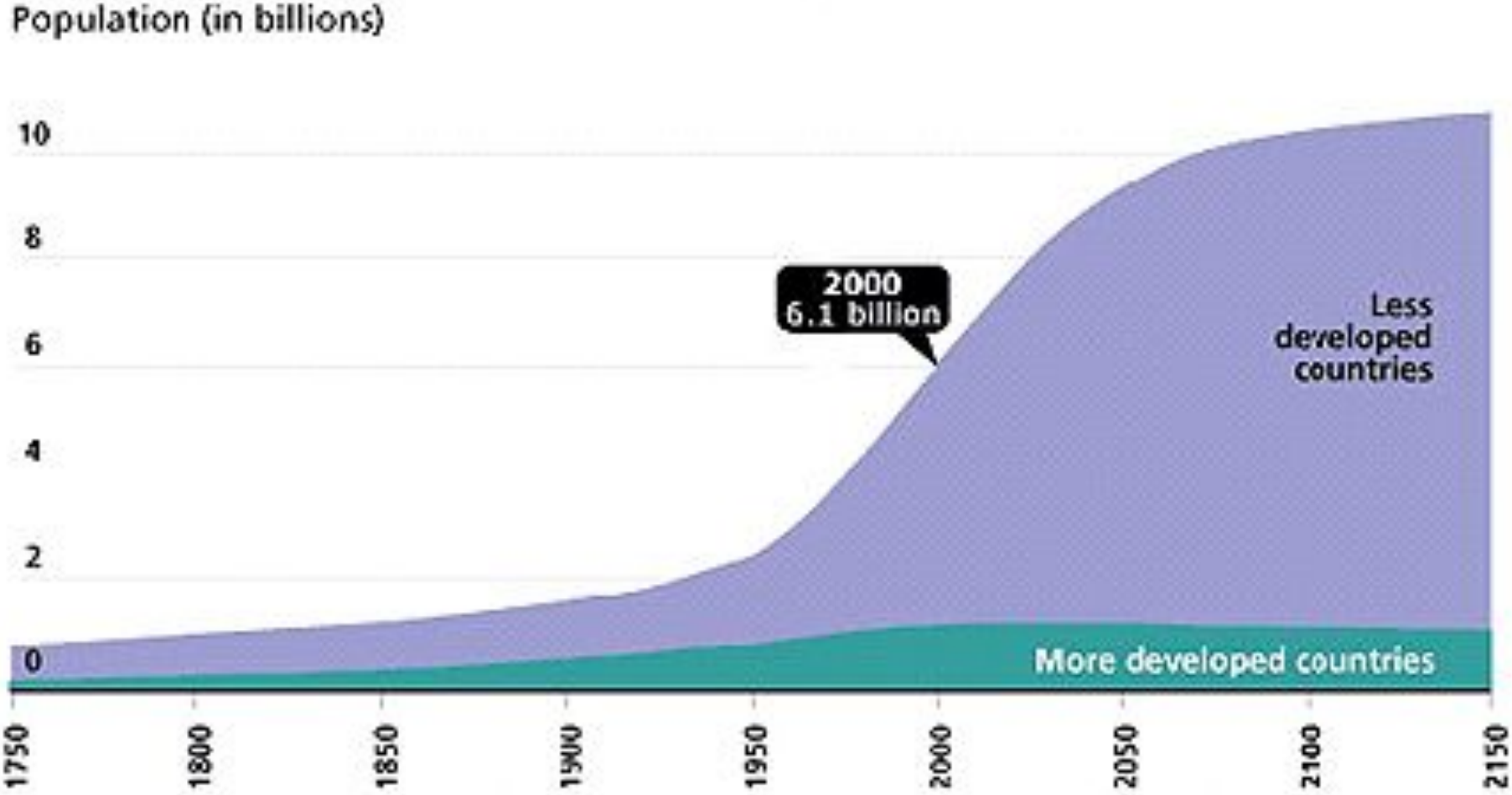
World Population Growth, 1750–2150



Source: United Nations, *World Population Prospects, The 1998 Revision*; and estimates by the Population Reference Bureau.

2.7 Population Futures

- **Elderly Support Ratio**
  - The number of working-age people (ages 15–64) divided by the number of persons 65 or older

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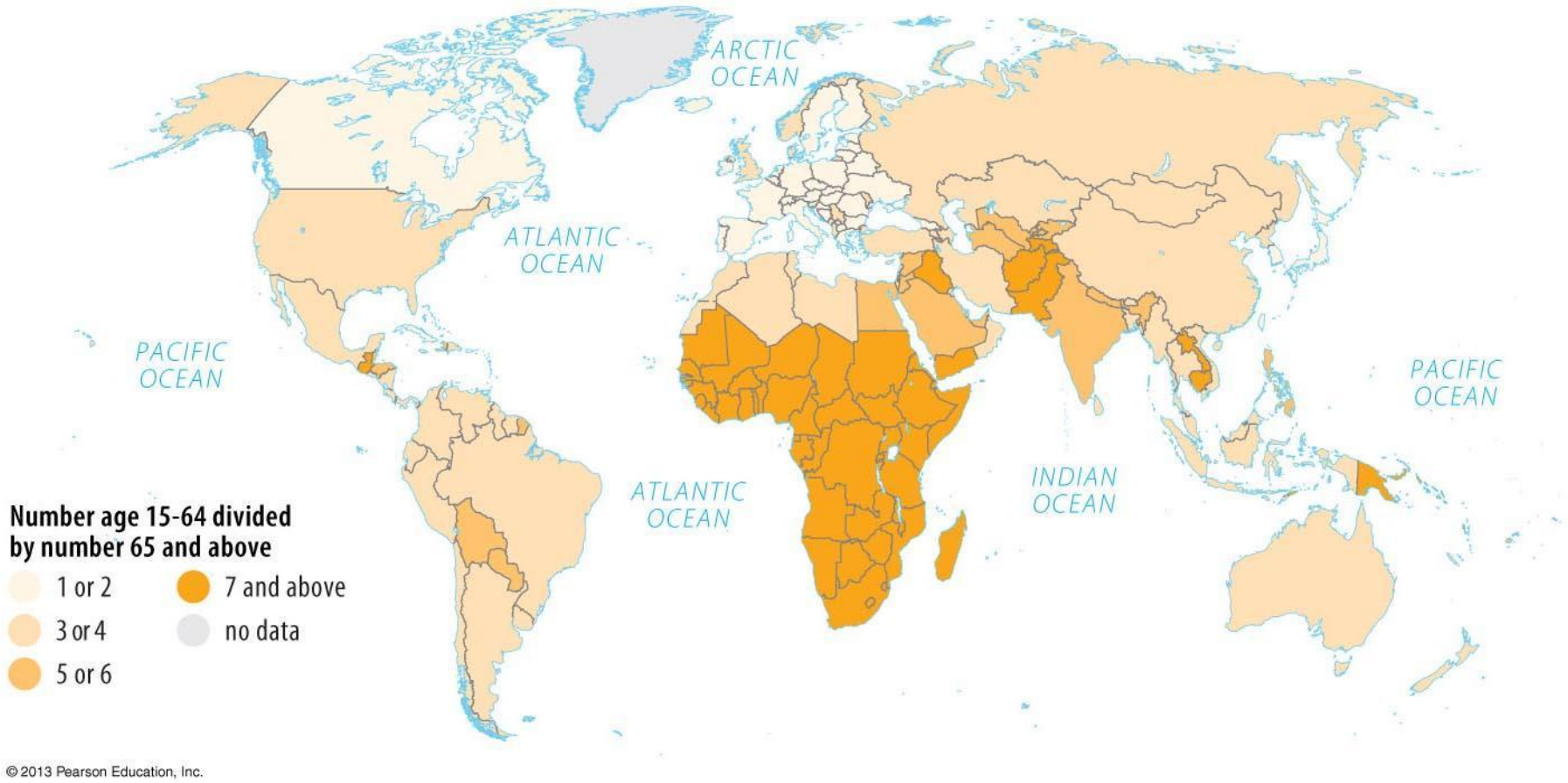
2.7 Population Futures

ELDERLY SUPPORT RATIO



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2.7 Population Futures

Demographic transition possible stage 5

In this stage, it is predicted that the most developed countries will experience population decline. (negative NIR)

- Factor of more elderly than young population in these countries
- Fewer young women who will be entering their childbearing years

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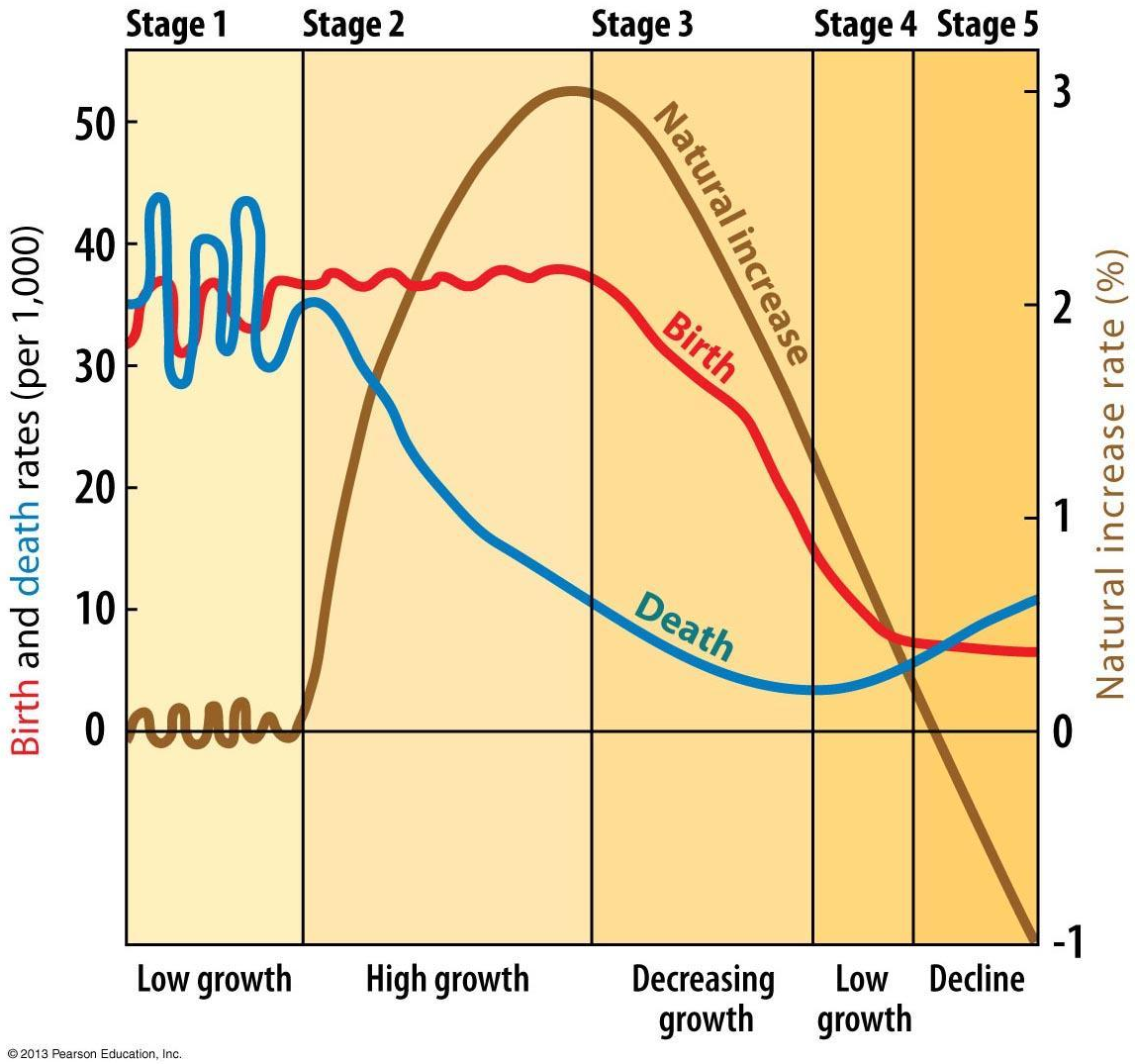
2.7 Population Futures

POSSIBLE STAGE 5 OF DEMOGRAPHIC TRANSITION



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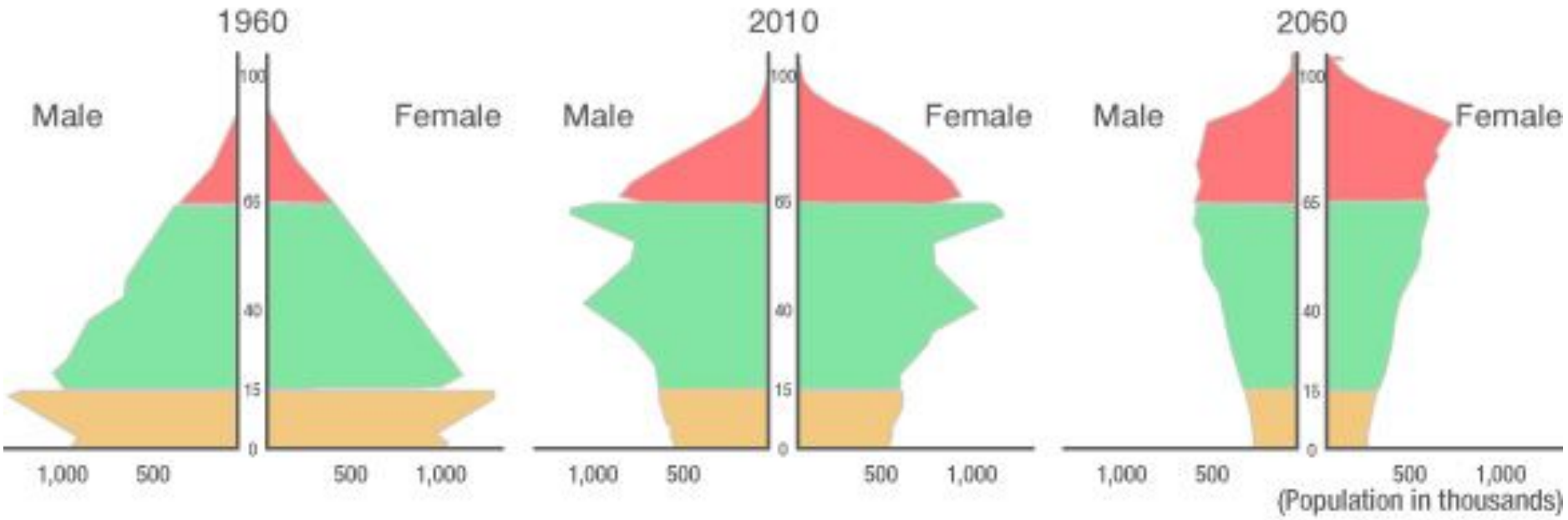
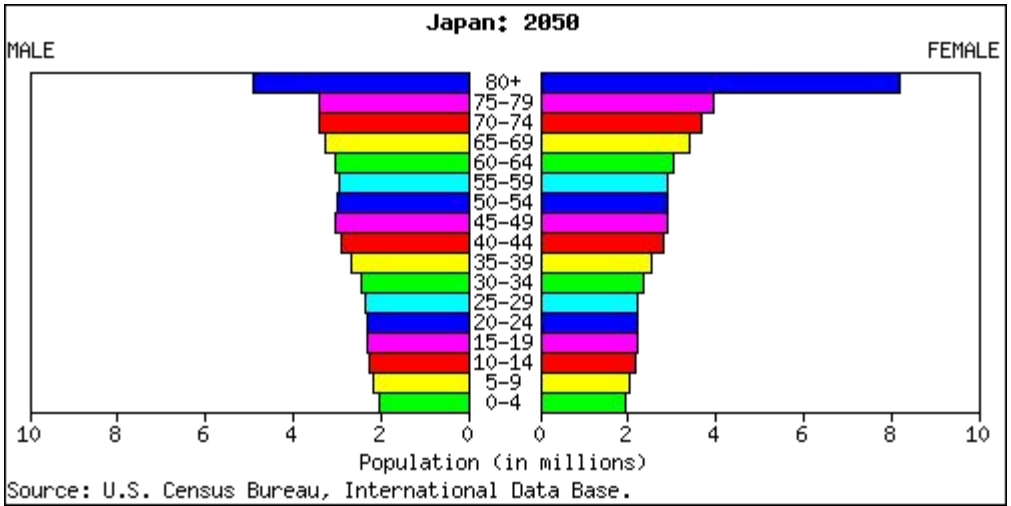
Japan's Changing Population Pyramid (population by age)



Sources: (For 1960 and 2010) Statistics Bureau (Ministry of Internal Affairs and Communications), *Population Census of Japan*; (for 2060 projection) National Institute of Population and Social Security Research, *Population Projections for Japan* (January 2012), based on medium-variant fertility and mortality assumptions.



Japan's Upside-Down Population Pyramid

2.7 Population Futures

POSTER IN SHANGHAI, CHINA, PROMOTES ONE-CHILD POLICY

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2.7 Population Futures

India Versus China

- **These two countries comprise more than one-third of the world's population.**

India's population policies

- Beginning in 1971, citizens paid to be sterilized
- Now a stronger emphasis on education as family planning
- Limited success

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2.7 Population Futures

India Versus China

- **China's population policies**
  - *China's government implemented the One Child Policy in 1980
  - Financial and other incentives to limit family size
  - Greater prosperity in China has led to a relaxation of one-child policy
  - Now a stronger emphasis on education as family planning
    - Family-planning fees

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2.7 - Population Futures

China's One Child Policy

Here is a very interesting 27 minute video entitled "***The Suffering Caused by China's One Child Policy***"

Learning Targets 2.8

- Summarize Malthus's population theory.
- Describe how modern supporters of Malthus have used his theory to interpret recent population-related changes.
- Evaluate Malthus's population theory and list the main criticisms of the theory.

2.8 Malthus's Grim Forecast

- **Thomas Malthus (1766–1834)**
  - *An Essay on the Principle of Population* (1798)
    - *Population increases *geometrically*
    - *Food production increases *arithmetically*

*Malthus theorized that population was growing more rapidly than resources and in the future there would become resource and scarcity issues which would cause conflicts and wars

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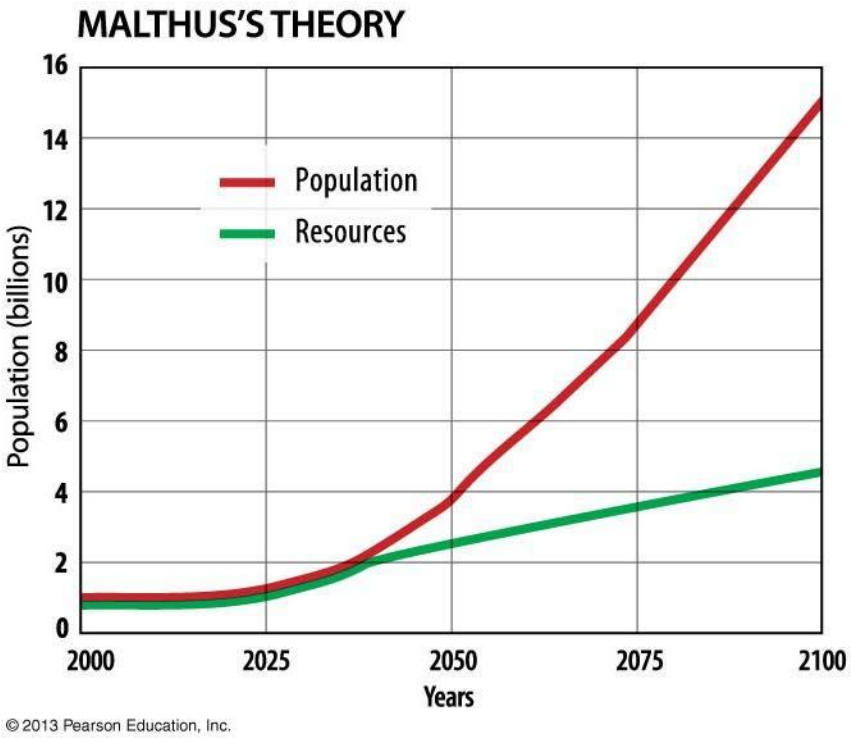
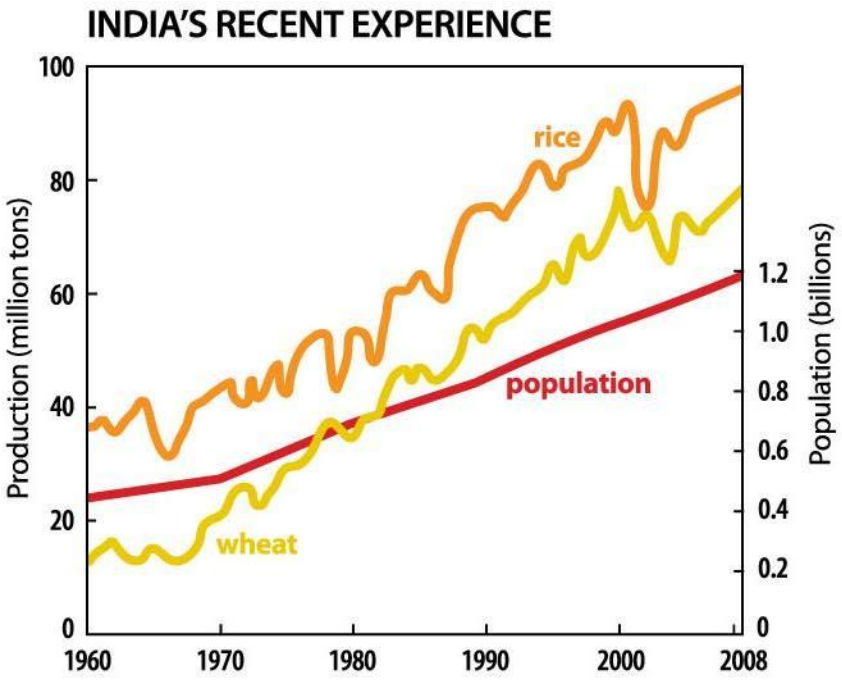
2.8 Malthus's Grim Forecast





MALTHUS THEORY AND REALITY

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2.8 Malthus's Grim Forecast

- **Contemporary Malthus supporters observe that today:**
  - Relatively poor countries have experienced the most rapid population growth.
    - Little wealth in these countries to support growth
  - World population growth is outstripping many global resources.
    - Will result in war and other civil violence

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2.8 Malthus's Grim Forecast

- **Malthus's Critics**
  - Argue a larger population could stimulate economic growth, food production, and technological development.
  - Unjust social practices are to blame, not lack of resources.
  - Some argue that high population growth leads to greater political and economic power.

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2.8 Malthus's Grim Forecast

- **Malthus's theory and reality**
  - Globally, Malthus's theory has not been supported during the past 50 years.
    - World food production has increased faster than the NIR.

      actual food production has been much higher than Malthus predicted

      food production has grown faster than natural increase rate
  - Hunger and famine are distribution problems and not production problems.
  - Cultural, economic, and technological change has slowed population growth.

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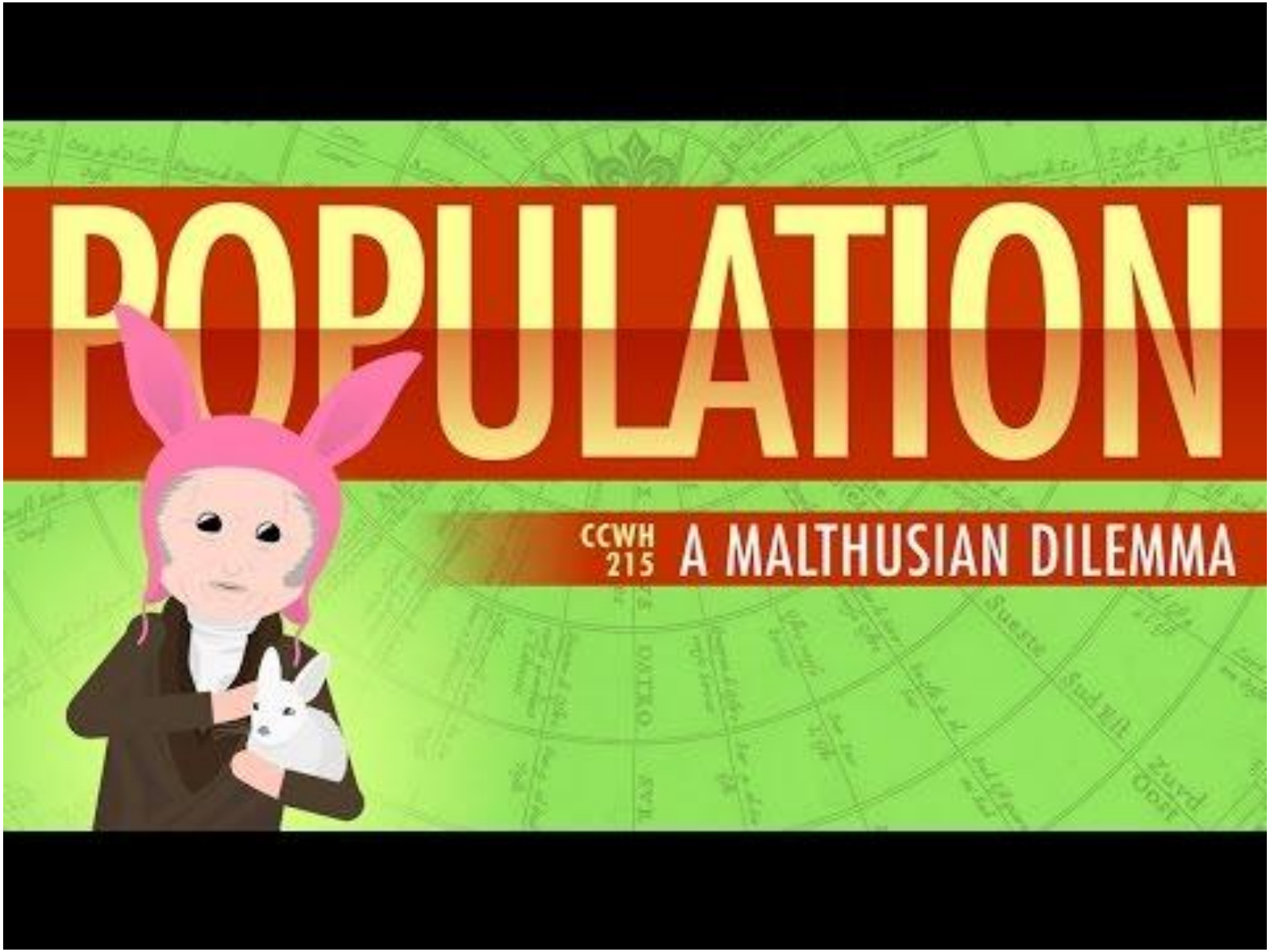
Malthus's Grim Forecast - Crash Course



Gapminder Computer Lab

Go To: www.gapminder.org

GapMinder Worksheet link:
http://www2.moundsviewschools.org/irondale/userfiles/redmana/human%20geography%20unit%202/activity_demographic_transition_model_gapminder.pdf

Population Reference Bureau Computer Lab

Find the instructions for this lab here:

https://docs.google.com/a/moundsviewschools.org/document/d/1h9NOqOJuIHC8gryIiYa4A338qi6n9u3Bct7GETijjAM/edit?usp=sharing

Complete the lab by MAKING A COPY of this link and filling in the answers.

Population Interactives

Census Mapper, Population Bracketology, and Population Pyramids

Go to this link, follow the directions, and complete the lab assignment.

https://docs.google.com/document/d/1H_sLu-YuzclNE1EQnTbt20AEHnXeyBlAe0DyKknH0ls/edit?usp=sharing

2.9 The Epidemiological Transition

- Each stage of the demographic transition has distinctive causes of death.
- The leading causes of death shift through the demographic transition.

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2.9 The Epidemiological Transition

- **Stage 1: Pestilence and famine (high CDR)**
  - "natural checks"
    - Infectious and parasitic diseases, accidents, animal and human attacks

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2.9 The Epidemiological Transition

- **Stage 2: Receding pandemics (rapidly declining CDR)**
  - Improved sanitation, nutrition, medicine, and industrial revolution
  - Not immediate decline in CDR

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2.9 The Epidemiological Transition

- **Stage 3: Degenerative diseases (moderately declining CDR)**
  - Decreasing deaths from infectious diseases and increase in chronic disorders (aging)

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2.9 The Epidemiological Transition

- **Stage 4: Delayed degenerative diseases (low but increasing CDR)**
  - Cancer and cardiovascular diseases still present
  - Medical advances and behavioral changes extend life expectancy

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2.9 The Epidemiological Transition

- **Early mapped cholera distribution**
- **John Snow**
  - English doctor mapped location of 1854 Soho (London, UK) cholera victims and location of water pumps
    - Revealed that the disease was caused by contaminated water

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2.9 The Epidemiological Transition

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BIRTH OF GIS

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2.10 Global Health Threats

- **Some infectious diseases have returned, and new ones have emerged.**
  - A possible Stage 5 of the epidemiological transition
  - Previously controlled and eradicated diseases return
  - New diseases emerge

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2.10 Global Health Threats

- **Reasons for possible Stage 5**
  - Poverty
    - Unsanitary conditions and poor access to medical care

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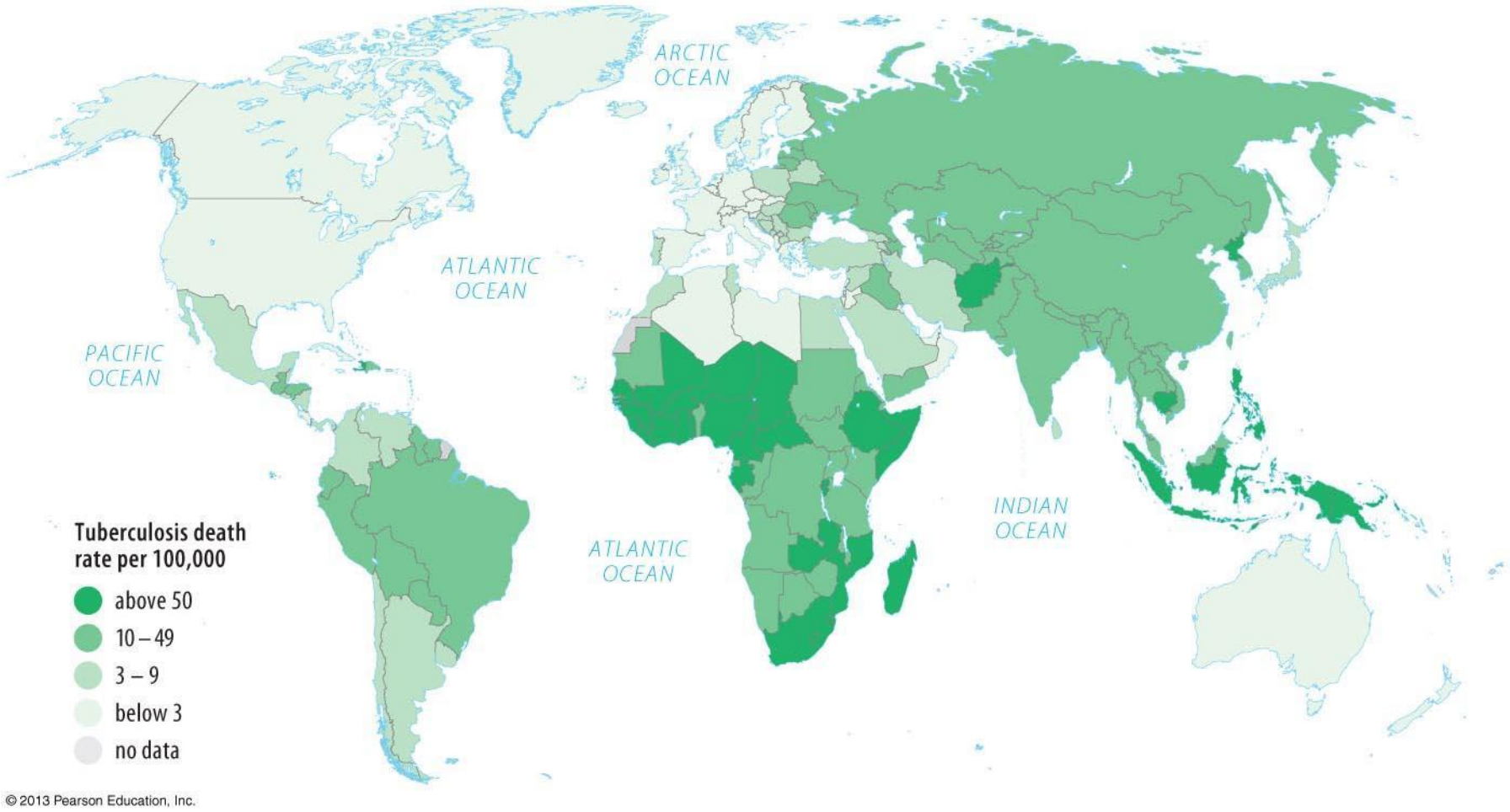
2.10 Global Health Threats

TUBERCULOSIS (TB) DEATHS, 2009



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2.10 Global Health Threats

- **Reasons for possible Stage 5**
  - Evolution
    - Development of resistance to drugs and other controls
  - Improved travel
    - More rapid and widespread transportation of diseases

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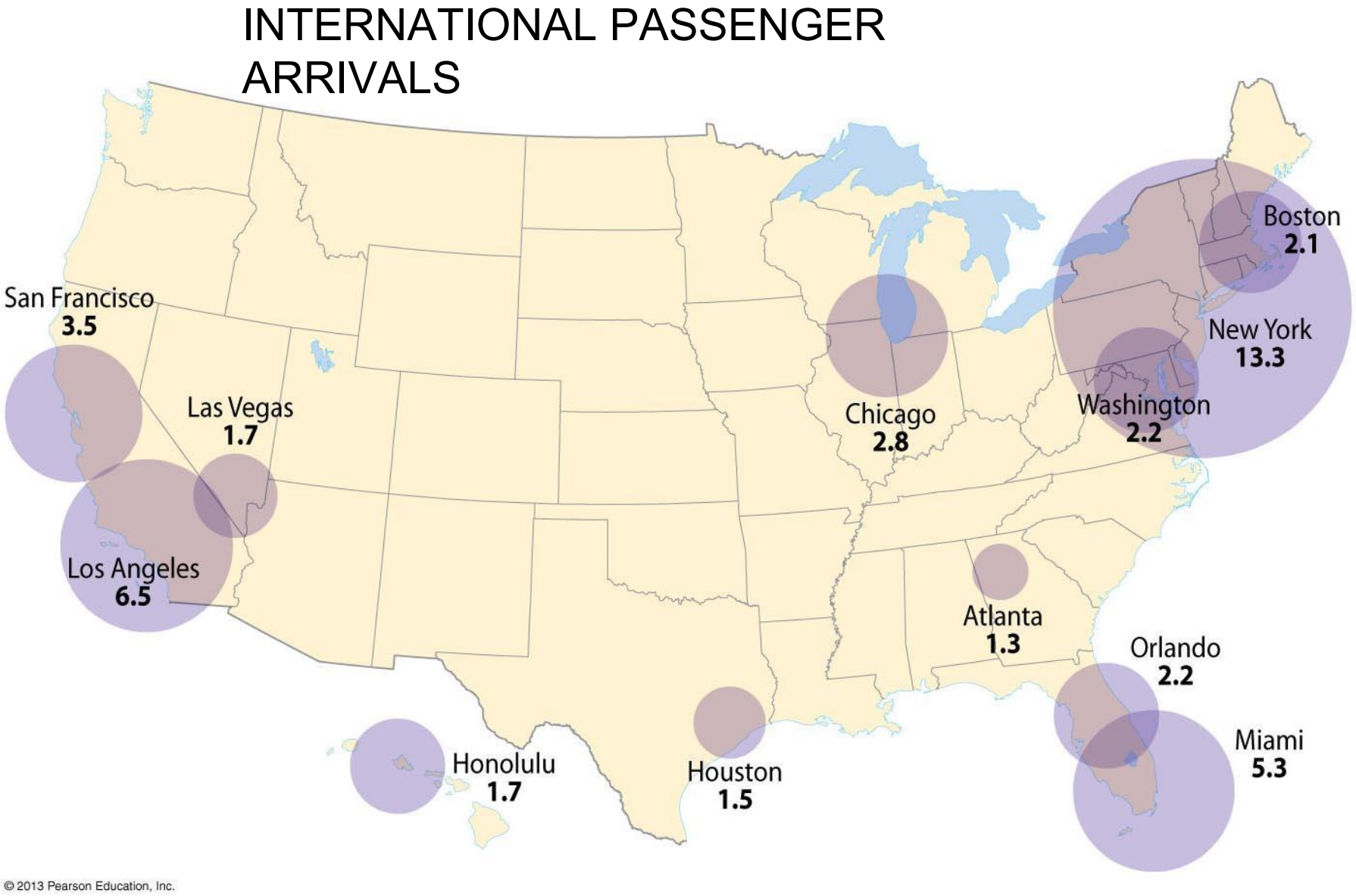
2.10 Global Health Threats



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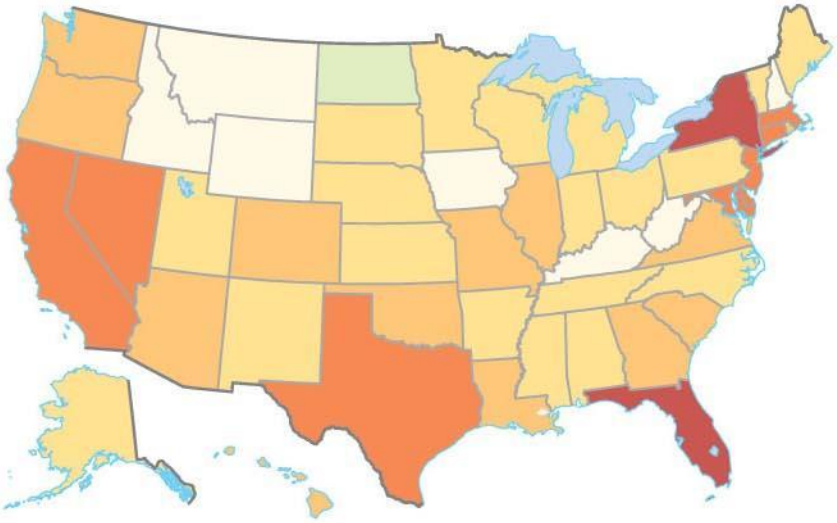
2.10 Global Health Threats

DIFFUSION OF AIDS IN THE UNITED STATES

NEW CASES IN 1981



NEW CASES IN 1993

New AIDS cases per 100,000 population

- 60 and above
- 40 – 59
- 20 – 39
- 10 – 19
- 1 – 9
- below 1

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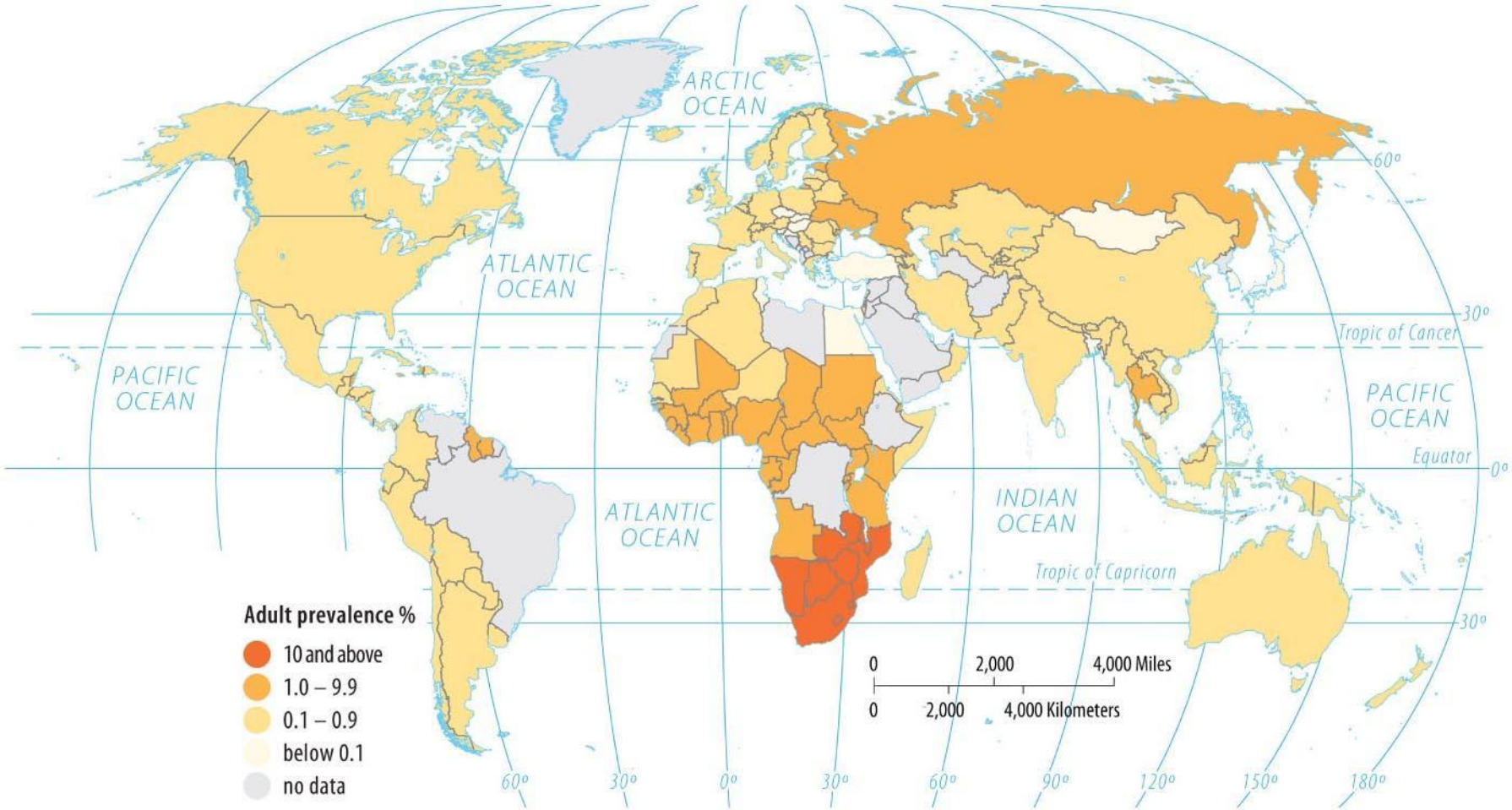
2.10 Global Health Threats

HIV/AIDS



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Chapter Review

- **Key Questions**
  - Where is the world's population distributed?
  - Why does population growth vary among countries?
  - How might population change in the future?

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