

Lesson 2

# Human Population

# Focus Question

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What factors affect human population growth?

# New Vocabulary

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demography

demographic transition

zero population growth (ZPG)

age structure

# Review Vocabulary

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**carrying capacity:** the maximum number of individuals in a species that an environment can support for the long term

# Human Population Growth

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- The study of human population size, density, distribution, movement, and birth and death rates is **demography**.

# Human Population Growth

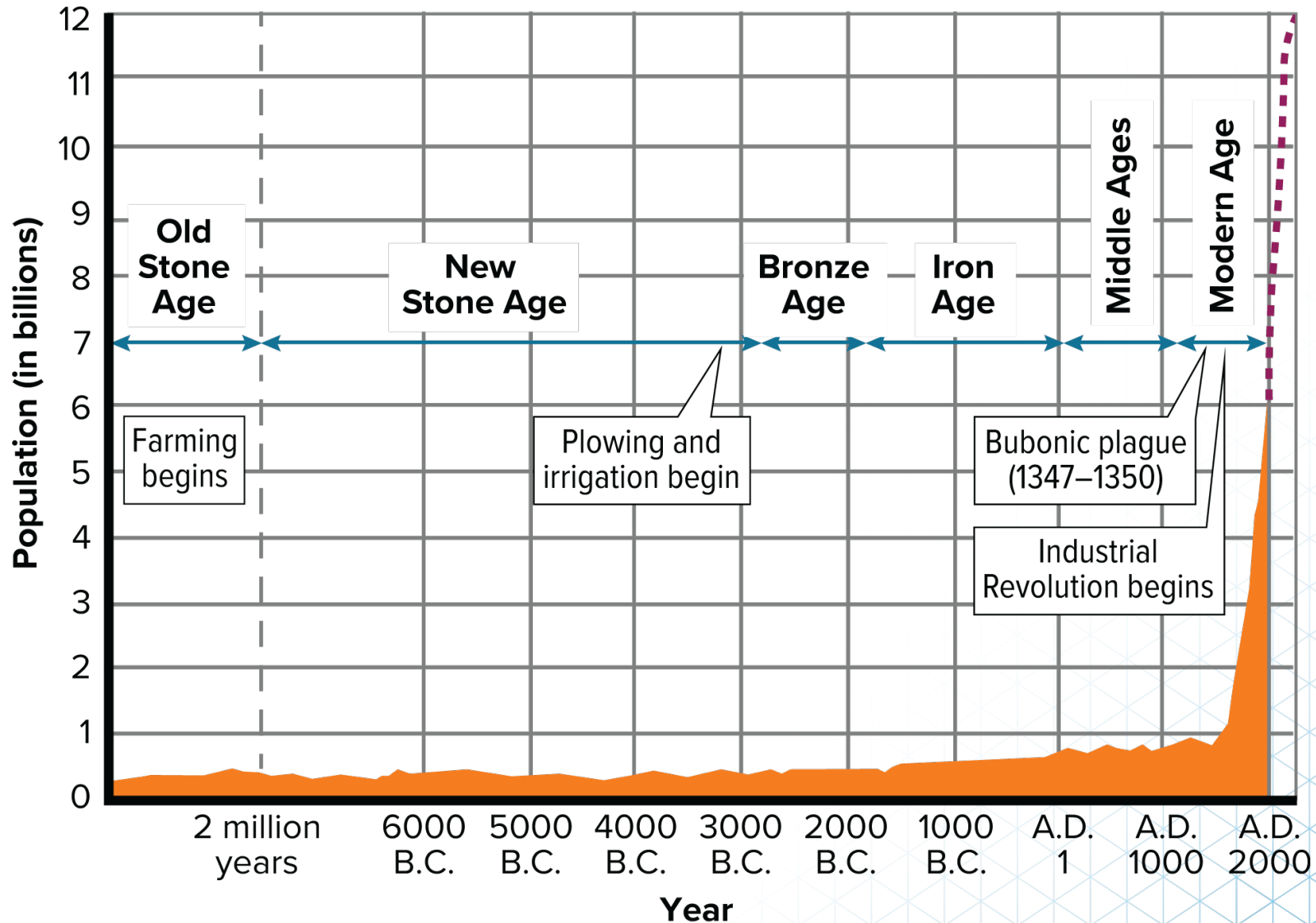
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## Technological Advances

- Historically, environmental conditions kept the human population at a relatively constant number below carrying capacity.
- Humans have learned to alter the environment in ways that appear to have changed its carrying capacity:
  - Agriculture
  - Domestication of animals
  - Medicine
  - Improvements to shelter

# Human Population Growth

Human Population on Earth



# Human Population Growth

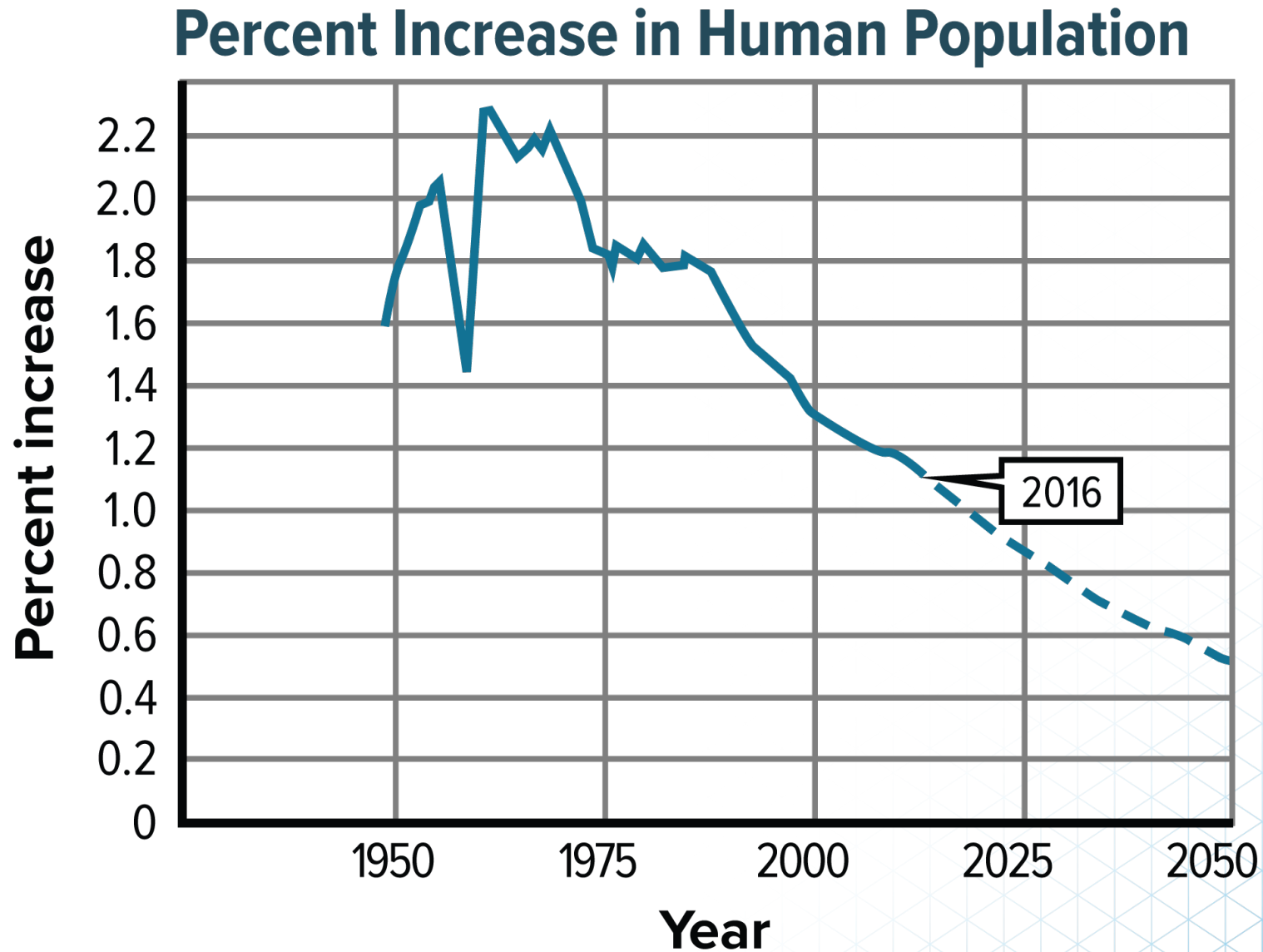
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## Human Population Growth Rate

- The human population continues to grow.
- The human population growth rate is slowing.



# Human Population Growth



# Trends in Human Population Growth

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- Countries with similar economies tend to have similar population growth trends.
- The change in a population from high birth and death rates to low birth and death rates is called a **demographic transition**.

# Trends in Human Population Growth

- Population growth rates (PGR) can be used to compare populations in different countries.
- Population growth trends are often similar in countries that have similar economies.

$$\frac{\text{Birthrate} - \text{death rate} + \text{migration rate}}{10} = PGR (\%)$$

# Trends in Human Population Growth

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## Zero Population Growth

- **Zero population growth (ZPG)** occurs when birth + immigration = death + emigration.
- At ZPG, the age structure should be more balanced, with numbers at pre-reproductive, reproductive, and post-reproductive ages approximately equal.

# Trends in Human Population Growth

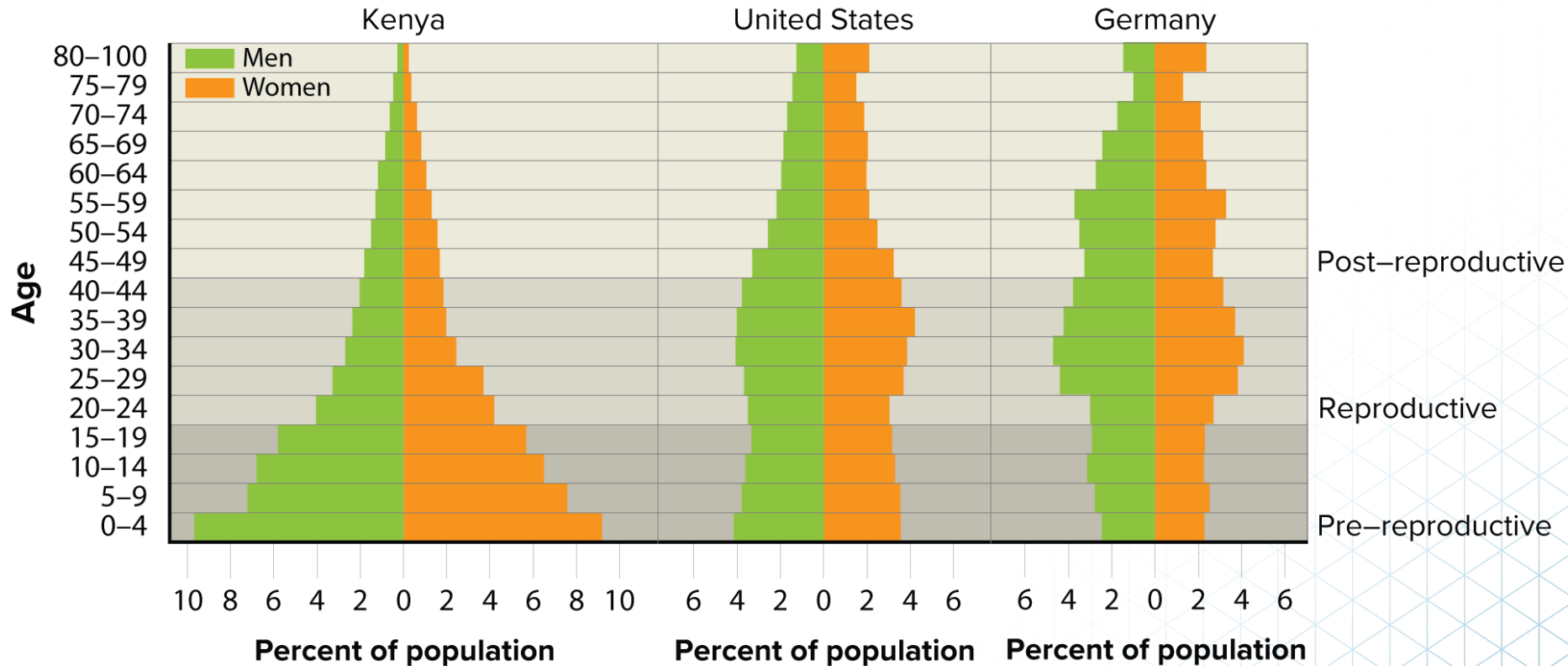
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## Age Structure

- A population's **age structure** is the number of males and females in each of three age groups:
  - pre-reproductive stage
  - reproductive stage
  - post-reproductive stage

# Trends in Human Population Growth

## Age Structure in Human Population for 2015



# Trends in Human Population Growth

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## Human Carrying Capacity

- Scientists are concerned about the human population reaching or exceeding the carrying capacity.
- An important factor is the amount of resources from the biosphere that are used by each person.