

APES Unit 3 Study Guide

Ultimate Review Packet (3.1 - 3.3)

3.1 - Generalists & Specialist Species

- Describe** the difference between specialist species and generalist species:
- Explain** whether specialists or generalist species would be advantaged in a grassland ecosystem that is frequently disrupted by fires:

3.2 - r-selected & K-selected Species

- Describe** the reproductive strategy of r-selected species:
- Identify** THREE characteristics of r-selected species:
- Describe** the reproductive strategy of K-selected species:
- Identify** THREE characteristics of K-selected species:
- How can you remember the difference between r-selected and K-selected parents?:
- Explain** why r-selected species are more likely to become invasive species than K-selected species:

3.3 - Survivorship Curves

- Define** survivorship:
- Plot the three survivorship curves on the blank axis below. Be sure to add axis labels:



- Identify** a characteristic and example of each of the three survivorship types

APES Unit 3 Ultimate Review Packet (3.4 - 3.6)

3.4 - Carrying Capacity

- a. **Define** carrying capacity:
- b. **Describe** the factors that determine carrying capacity for a population:
- c. **Explain** the concept of overshoot and die off, using a population of deer as an example:

3.5 - Population Growth & Resource Availability

- a. **Define** and provide an example of density-dependent factors:
- b. **Define** and provide an example of density-independent factors:
- c. **Describe** and provide an example of each of the three types of population distribution:
 - i. Uniform:
 - ii. Random:
 - iii. Clumped:
- d. **Identify** the type of growth populations can exhibit briefly when limiting resources are available in abundance:
- e. **Explain** why populations in natural ecosystems can't sustain this model of growth for long:
- f. **Identify** the model of growth that populations exhibit in natural ecosystems with limited resources:

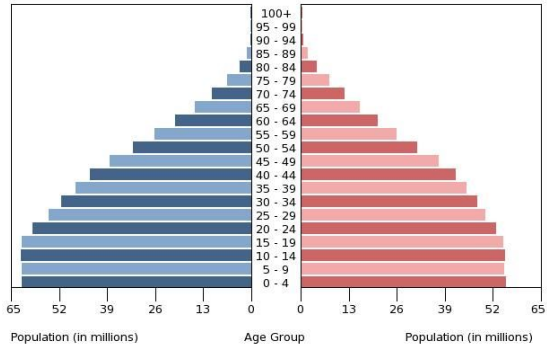
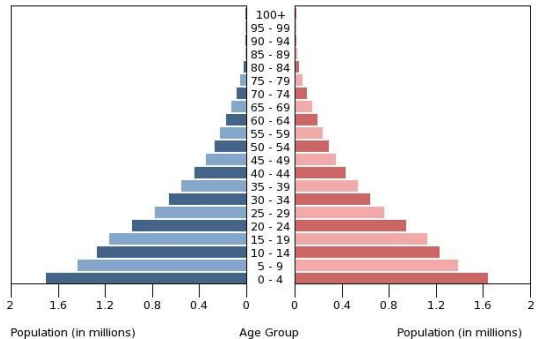
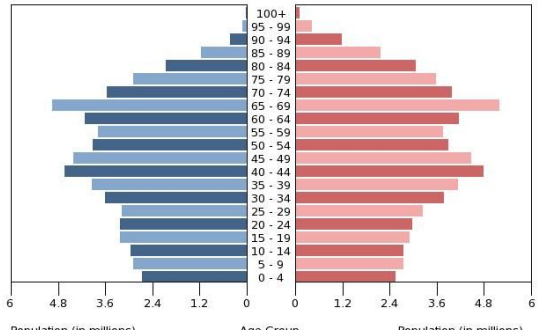
3.6 - Age Structure Diagrams

- a. **Define** the term age cohort and **identify** the three key age cohorts used for interpreting age structure diagrams:
- b. **Explain** what an age structure diagram with a larger portion of individuals in the pre-reproductive age cohort than any other age cohorts can tell you about the population:
- c. **Explain** what an age structure diagram with a slightly larger pre-reproductive age cohort than reproductive age cohort can tell you about the population:
- d. **Explain** what an age structure diagram with roughly equal pre-reproductive and reproductive age cohorts can tell you about the population:

APES Unit 3 Ultimate Review Packet (3.6)

3.6 Age Structure Diagrams - Continued

- f. **Explain** what an age structure diagram with a greater portion of individuals in reproductive and post-reproductive age cohorts than pre-reproductive age cohorts can tell you about the population:
- g. **Identify** the largest age cohort, **describe** the population growth rate, and provide an economic or societal characteristic of each of the following age structure diagrams:

 <p style="font-size: small;">Population (in millions) Age Group Population (in millions)</p>	<p>Largest age-cohort:</p> <p>Growth rate:</p>	<p>Economic/societal characteristic:</p>
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APES Unit 3 Ultimate Review Packet (3.7 - 3.8)

3.7 - Totally Fertility Rate (TFR)

- a. **Define** TFR:
- b. **Identify** THREE factors that influence TFR and for each, **describe** how the factor impacts TFR:
- c. **Explain** TWO reasons that developed nations typically have lower TFR than developing nations:
- d. **Describe** an approach that a national government may take to decrease TFR:

3.8 - Population Dynamics

- a. **Define** the terms Crude Birth Rate (CBR) and Crude Death Rate (CDR):
- b. What is the formula for calculating percent growth rate of a country using CBR and CDR?
- c. **Calculate** the global population growth rate using the CBR and CDR data from 2019:
CBR: 17.89 CDR 7.52
- d. What is the rule of 70?
- e. **Calculate** the doubling time of the United States, based on its 2019 CBR (11.4) and CDR (8.7)
- f. **Describe** Malthusian theory and **explain** why Malthus's prediction didn't come true:
- g. **Describe** the relationship between infant mortality rate and replacement level fertility.
- h. **Explain** why developed nations have lower infant mortality and replacement level fertility rates:
- i. Define GDP and **describe** what it indicates about a country:

APES Unit 3 Ultimate Review Packet (3.9)

3.9 - Theory of Demographic Transition

- a. Summarize the basic transition human populations go through in the Theory of Demographic Transition:
- b. **Describe** the birth rate, death rate, population growth rate, and economic/societal characteristics of countries during each phase of transition:

Phase 1	Birth rate: Death rate: Growth rate:	Cause for birth/death rate changes: Economic/societal characteristics:
Phase 2	Birth rate: Death rate: Growth rate:	Cause for birth/death rate changes: Economic/societal characteristics:
Phase 3	Birth rate: Death rate: Growth rate:	Cause for birth/death rate changes: Economic/societal characteristics:
Phase 4	Birth rate: Death rate: Growth rate:	Cause for birth/death rate changes: Economic/societal characteristics: