

Unit 2: Population and Migration Patterns and Processes

Unit 2 covers where people live and why, how populations grow and shrink, and why people move. You will work with three measures of density, the demographic transition model, Malthusian theory, population policies, Ravenstein's laws of migration, and the vocabulary that separates refugees from internally displaced persons from asylum seekers.

AP Human Geography

Population and Migration

About 15 minutes to read

How to use this guide

Read it in order the first time because the topics build on each other. Density measures set up the population questions, the demographic transition model explains how growth changes over time, Malthus and population policies respond to that growth, and the migration sections apply the same push-and-pull logic to movement. Exam questions often give you a scenario and ask you to match it to the right term or model.

After the first read, use the trap boxes and the tables to review the distinctions that exam questions test most often. Finish with the practice questions, then complete the recall check on the last page out loud and note any items you cannot explain yet.

What this unit is worth. Population and Migration is about 12 to 17 percent of the AP Human Geography exam. It is also one of the most vocabulary-heavy units, which means careful definitions earn points here. The density measures, the transition model stages, and the migration terms are the highest-yield material.

2.1 Population Distribution

Population is not spread evenly. The **factors of population distribution** are physical and human. Physical factors include climate, landforms, and water bodies. People cluster where farming is possible and living is tolerable, which is why dense settlement follows river valleys, coastlines, and temperate zones while deserts, high mountains, and arctic regions stay sparse. Human factors include culture, economics, history, and politics. Jobs, trade routes, colonial history, and government policy all pull people toward some places and away from others.

Three **density methods** measure how crowded a place is, and each reveals something different about the **land pressure** the population exerts.

MEASURE	FORMULA	WHAT IT REVEALS
Arithmetic density	People divided by total land area	Overall crowding, but it hides internal variation
Physiological density	People per unit of arable land	Pressure on the land's capacity to produce food
Agricultural density	Farmers per unit of arable land	Level of agricultural technology

Agricultural density works in a direction students often get backwards. A higher ratio of farmers to arable land suggests more labor-intensive, less mechanized farming. When one farmer with machinery works a large area, the ratio drops. So a high agricultural density means low technology, not high.

Trap. When a question asks which measure shows pressure on farmland, the answer is physiological density, not arithmetic density. Arithmetic density counts every square kilometer including deserts and mountains. Physiological density counts only land that can grow food, which is the land that matters for feeding people.

2.2 Consequences of Population Distribution

Where people live shapes what societies can do. **Population distribution and density** affect political, economic, and social processes, including the provision of services such as medical care. Dense cities can support hospitals and transit that sparse rural areas cannot, while overcrowded areas strain the same services.

Carrying capacity is the maximum population size an environment can sustain. As density and distribution push a population toward that limit, pressure on natural resources grows. Carrying capacity is not fixed forever. Technology, trade, and resource management can raise it, and environmental damage can lower it.

2.3 Population Composition

Age structure is the distribution of a population by age. These patterns vary across regions and can be mapped and analyzed at different scales. **Sex ratio** is the number of males per 100 females in a population, and it also varies across regions.

The **population pyramid** is a bar graph showing age and sex distribution. Geographers use it to assess growth and decline and to predict markets for goods and services. A wide base means many children and coming demand for schools. A wide top means many elderly and coming demand for health care. Pyramid shapes have names worth knowing.

SHAPE	WHAT IT LOOKS LIKE	WHAT IT MEANS
Expansive	Wide base, narrow top	High birth rates and rapid growth
Constrictive	Narrow base, wider middle or top	Low birth rates and an aging population
Stationary	Roughly even bars	Slow or zero growth

Trap. Sex ratio is males per 100 females, so read the direction. A ratio of 105 means 105 males for every 100 females, which is more males. Students sometimes flip this and answer as if the larger number meant females.

2.4 Population Dynamics

Three **components of population change** determine whether a population grows or declines: fertility, mortality, and migration. The first two give the **rate of natural increase**, which is the crude birth rate minus the crude death rate, expressed as a percentage. It tells you how fast a population is growing or shrinking absent migration.

Population-doubling time is the number of years needed for a population to double at the current rate of natural increase. The rule of 70 estimates it: divide 70 by the growth rate. A country growing at 2 percent per year doubles in about 35 years. A country growing at 1 percent takes about 70 years.

Trap. The rate of natural increase excludes migration. If a question gives you the birth rate, the death rate, and immigration numbers, only the first two go into the calculation. The word natural is the signal that migration is left out.

2.5 The Demographic Transition Model

The **demographic transition model** explains population change over time as birth and death rates shift through stages tied to economic development. Learn the stages as a story about the gap between births and deaths.

STAGE	BIRTH RATE	DEATH RATE	NATURAL INCREASE
1. High stationary	High	High and fluctuating	Low and stable
2. Early expanding	High	Falls rapidly	High and rapid
3. Late expanding	Falls	Falls more slowly	Positive but shrinking
4. Low stationary	Low	Low	Very low
5. Declining (proposed)	Very low	Low	Negative

Stage 2 is where the fastest growth happens. Death rates fall because of better medicine, sanitation, and food supply, while birth rates stay high because cultural norms change more slowly. The gap between the two is widest here. In stage 3, birth rates start falling and the gap narrows. Stage 5 is a proposed addition for countries like Japan where births have fallen below deaths.

Trap. Stage 2 is the rapid-growth stage, not stage 3. The signature of stage 2 is falling death rates with birth rates still high. If a question describes death rates dropping while birth rates hold steady, that is stage 2. Stage 3 is when birth rates finally start falling too.

The **epidemiological transition** is a related theory about causes of death. As societies develop, deaths shift from infectious disease to degenerative and lifestyle diseases. It tracks the mortality side of the demographic transition: what kills people changes as the death rate falls.

2.6 Malthusian Theory

Malthusian theory comes from Thomas Malthus, who argued in 1798 that population grows geometrically while food production grows arithmetically. Population doubles in a pattern like 1, 2, 4, 8, while food increases in a pattern like 1, 2, 3, 4. Population therefore outruns resources unless something checks it. Malthus described preventive checks, such as delayed marriage and moral restraint, and positive checks, such as famine, disease, and war.

The theory has well-known critiques. Malthus underestimated technological innovation in food production, from the agricultural advances of his own century to the Green Revolution of the twentieth. He also did not foresee that birth rates fall as societies develop, which is exactly what the demographic transition model describes. Critics argue his checks were too pessimistic and his view of food production too static.

Trap. Keep the two growth rates attached to the right thing. Population grows geometrically, which is the fast one. Food grows arithmetically, which is the slow one. Mixing them up reverses his whole argument, and exam questions test exactly this pairing.

2.7 Population Policies

Governments try to shape population change with three kinds of policy. A **pronatalist policy** encourages higher birth rates through measures like tax incentives or paid parental leave. Countries facing aging populations and low fertility use these. An **antinatalist policy** discourages population growth, such as China's former one-child policy, and is used to slow rapid growth or reduce strain on resources. An **immigration policy** regulates who may enter and settle in a country, which affects both population size and composition.

Trap. Pronatalist and antinatalist are easy to flip under time pressure. Pro means for, as in for more births. Anti means against, as in against growth. Read the prefix before you commit to an answer.

2.8 Women and Demographic Change

Women and fertility decline is one of the main engines of demographic change. Changing social values and access to education, employment, health care, and contraception have reduced fertility rates in most parts of the world. This is a large part of why birth rates fall in stage 3 of the demographic transition.

Ravenstein's laws of migration are a set of generalizations from nineteenth-century migration data. The most tested ones are that most migrants move short distances, that migration proceeds in stages toward larger centers, that long-distance migrants head for major economic centers, that each stream of migration produces a counterstream, that most migrants are adults, and that economic motives dominate. The course connects these laws to how changing roles for women have influenced migration patterns.

Trap. Ravenstein's most tested finding is that most migrants move short distances. Long journeys make better stories, but the data says most moves are local. When a question asks what Ravenstein found, short distance is usually the answer.

2.9 Aging Populations

Population aging is the shift toward a higher proportion of elderly people, determined by birth and death rates and life expectancy. When fewer children are born and people live longer, the age structure tilts upward.

The **dependency ratio** measures the burden this creates. It is the ratio of dependents, meaning the young and the elderly, to the working-age population. A rising ratio in aging societies strains social support systems such as pensions and health care, because fewer workers support more nonworkers.

Trap. The dependency ratio divides by the working-age population. A growing share of elderly raises the ratio even if nothing else changes, because the numerator grows while the denominator shrinks. That is why aging societies feel the strain first in pension and health care systems.

2.10 Causes of Migration

Migration starts with a comparison between two places. **Push factors** are conditions in the origin location that encourage people to leave, such as unemployment, war, or natural disaster. **Pull factors** are conditions in the destination that attract migrants, such as jobs, better services, or political stability. Most moves involve both: something bad at home and something better elsewhere.

Intervening opportunities and obstacles sit between origin and destination. An intervening opportunity is a closer prospect, such as a job in a nearer city, that diverts the migrant from the original destination. An intervening obstacle is a barrier, such as distance, visa restrictions, or a physical feature, that hinders movement. These factors can be cultural, demographic, economic, environmental, or political.

Trap. Intervening opportunities and intervening obstacles do opposite things. An opportunity redirects the migrant toward a nearer destination instead. An obstacle blocks or slows the journey. One redirects, the other resists.

2.11 Forced and Voluntary Migration

Forced migration is migration compelled by force or threat. It includes slavery and the events that produce refugees, internally displaced persons, and asylum seekers. Three terms need careful sorting.

TERM	DEFINITION
Refugee	A person who flees across an international border because of a well-founded fear of persecution, war, or violence
Internally displaced person	A person forced to flee home but who remains within the country's borders
Asylum seeker	A person who has fled the country and seeks international protection while the claim for refugee status is decided

Trap. The three terms differ by borders and legal status. A refugee has crossed a border. An internally displaced person has not. An asylum seeker has crossed a border but is still waiting for the claim to be decided. Border crossed plus status decided is the whole sorting system.

Voluntary migration is migration undertaken by choice. It takes several named forms.

TYPE	DEFINITION
Chain migration	Earlier migrants help later ones follow, typically through family or community networks
Step migration	Movement in stages to progressively larger or more distant places
Transhumance	Seasonal movement of livestock between fixed summer and winter pastures
Guest worker	A migrant worker permitted to work temporarily in a foreign country

Trap. Chain migration and step migration both involve movement in stages, but the mechanism differs. Chain migration is about who helps you, as in family and community networks pulling you along. Step migration is about the route, as in a series of moves to bigger or more distant places.

2.12 Effects of Migration

Effects of migration fall on both origin and destination areas, and they are political, economic, and cultural. Origin areas often receive remittances, which are money migrants send home, but they can also suffer brain drain when skilled workers leave, and they may become dependent on that outside income. Destination areas gain labor supply and cultural diversity, but rapid arrivals can strain housing and services and trigger political tension or nativism.

Practice Questions

Original questions written for this guide in the style of the AP exam. Answers and explanations are on the next page, so complete the questions before checking them.

- 1.** A country has an arithmetic density of 200 people per square kilometer and a physiological density of 800 people per square kilometer of arable land. What does this comparison best indicate?
 - A. The country has a high level of agricultural mechanization.
 - B. Much of the country's land is not arable, and pressure on farmland is high.
 - C. The country has exceeded its carrying capacity.
 - D. The country's population is evenly distributed across its territory.

- 2.** A country is experiencing rapidly falling death rates while birth rates remain high. According to the demographic transition model, which stage best describes this country?
 - A. Stage 1
 - B. Stage 2
 - C. Stage 3
 - D. Stage 4

- 3.** A family flees fighting in their home region but remains within their country's borders, living in a temporary camp. According to AP Human Geography vocabulary, they are best described as
 - A. refugees
 - B. internally displaced persons
 - C. asylum seekers
 - D. guest workers

- 4.** A population pyramid has a very wide base that narrows sharply toward the top. This shape best indicates
 - A. an aging population with low birth rates
 - B. a stable population with slow growth
 - C. high birth rates and rapid population growth
 - D. negative population growth

Answer Key

- 1. B.** Physiological density counts only arable land, so 800 people per square kilometer of farmland against 200 per square kilometer of total land means only about a quarter of the land can be farmed. The pressure on that farmland is intense. A confuses the measures: mechanization is shown by agricultural density, the ratio of farmers to arable land, not by these two numbers. C goes too far: high density alone does not prove the carrying capacity has been exceeded. D contradicts the card definition, which says arithmetic density hides internal variation.
- 2. B.** Falling death rates with birth rates still high is the signature of stage 2, the early expanding stage, where the gap between births and deaths is widest and growth is fastest. A is wrong because stage 1 has high death rates too. C is wrong because stage 3 is when birth rates start falling. D is wrong because stage 4 has low rates on both sides.
- 3. B.** They were forced to flee but have not crossed an international border, which makes them internally displaced persons. A is wrong because refugee status requires crossing a border. C is wrong because an asylum seeker has fled the country and is waiting for a refugee claim to be decided. D is wrong because guest workers migrate voluntarily for temporary work, not under threat.
- 4. C.** A wide base means large young cohorts, which means high birth rates, and the sharp narrowing means rapid growth, the expansive pyramid shape. A describes the constrictive shape, which has a narrow base. B describes the stationary shape, with roughly even bars. D would show a base narrower than the cohorts above it, not a wide one.

One-Page Recall Check

- State the three density measures with their formulas and what each one reveals about land pressure.
- Explain why a high agricultural density means less mechanized farming, not more.
- Define carrying capacity and explain two things that can change it.
- Describe the three population pyramid shapes and what each predicts about future demand for services.
- State the components of population change and the formula for the rate of natural increase.
- Use the rule of 70 to find the doubling time for a population growing at 2.5 percent per year.
- Describe all five demographic transition stages in terms of birth rates, death rates, and natural increase.
- Explain how the epidemiological transition relates to the demographic transition.
- State Malthusian theory and name its two best-known critiques.
- Distinguish pronatalist, antinatalist, and immigration policies with one example each.
- State three of Ravenstein's laws of migration.
- Define the dependency ratio and explain why it rises in aging societies.
- Sort a scenario into push factors, pull factors, intervening opportunities, and intervening obstacles.
- Distinguish refugee, internally displaced person, and asylum seeker by borders and legal status.
- Distinguish chain migration from step migration.
- Name one economic effect of migration on origin areas and one on destination areas.

Where to go next. Turn every missed item above into flashcards and drill them spaced out over several days rather than in one sitting. In Rycal, open the AP Human Geography deck and work the Unit 2 cards on population and migration. If you have a test date, add it in the Test Planner so your review sessions pace themselves. You can also start your next review with a Brain Dump, then check what you missed against this guide.

Key terms for this unit

Factors of population distribution, Arithmetic density, Physiological density, Agricultural density, Density methods and land pressure, Population distribution and society, Carrying capacity, Age structure, Sex ratio, Population pyramid, Components of population change, Rate of natural increase, Population-doubling time, Demographic transition model, Epidemiological transition, Malthusian theory, Pronatalist policy, Antinatalist policy, Immigration policy, Women and fertility decline, Ravenstein's laws of migration, Population aging, Dependency ratio, Push factors, Pull factors, Intervening opportunities and obstacles, Forced migration, Refugee, Internally displaced person, Asylum seeker, Voluntary migration, Chain migration, Step migration, Transhumance, Guest worker, Effects of migration.

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