

Unit 6: Cities and Urban Land-Use Patterns and Processes

Unit 6 explains where cities come from, how they are organized inside and out, and what problems urban growth creates. It covers the forces that drive urbanization, the models geographers use to describe city structure, sustainable design responses, and the challenges cities face as they change.

AP Human Geography

Cities and Urban Land Use

About 20 minutes to read

How to use this guide

Read it in order the first time because the topics build on each other. The forces that create cities explain where they sit, the models describe how they are laid out, and the sustainability and challenge sections are about what happens when the models meet real growth. Exam questions usually give a description or a scenario and ask you to match it to a model, a process, or a policy response.

After the first read, use the trap boxes and the comparison 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. Cities and Urban Land-Use Patterns and Processes is about 6 to 10 percent of the AP Human Geography exam. The urban models and the housing-policy processes (redlining, gentrification, urban renewal) appear regularly in both multiple-choice and free-response questions, so the internal-structure section repays extra attention.

6.1 The Origin and Influences of Urbanization

Cities begin in particular places for particular reasons. **Site** is the physical character of the exact place a city occupies, such as a harbor, a river crossing, or a defensible hill. **Situation** is the city's location relative to other places, such as its position on trade routes or its access to resources and markets. Both shape where cities arise and how they grow.

The **drivers of urbanization** are the forces that push people and activity into cities and suburbs: changes in transportation and communication, population growth, migration, economic development, and government policies. These same drivers also push development outward into suburbanization.

Trap. Site and situation are easy to flip. Site is about the physical spot itself. Situation is about connections to everywhere else. A question that mentions a harbor is testing site. A question that mentions a crossroads of trade routes is testing situation.

6.2 Cities Across the World

Urban growth today is fastest in the developing world, and the vocabulary keeps up with the scale. A **megacity** has more than 10 million inhabitants, and a **metacity** has more than 20 million. Both are increasingly located in countries of the periphery and semiperiphery.

Growth also produces new forms at the urban edge. **Urban sprawl** is the spread of development outward from the city center into surrounding areas. An **edge city** is a large suburban node with its own offices, retail, and entertainment, functioning like a downtown outside the central city. An **exurb** is a settlement beyond the suburbs in the rural-urban fringe, whose residents commute to the city. A **boomburb** is a rapidly growing suburban community that reaches a large population quickly, a new land-use form created by suburbanization, sprawl, and decentralization.

Trap. Keep the edge forms straight. An exurb is residential and rural, with commuters traveling inward. An edge city is a job center in its own right, with offices and shopping. A boomburb is defined by how fast it grows. The exam likes descriptions that match one of these exactly, so read the scenario for which feature is being described.

6.3 Cities and Globalization

Not all cities matter equally in the world economy. A **world city** functions at the top of the world's urban hierarchy and drives globalization. The **urban hierarchy** ranks cities by size and function, from hamlets up to world cities, with fewer large cities and many small ones. **Global urban networks** are the connections between cities that carry trade, finance, and culture, and cities mediate global processes through those networks.

6.4 The Size and Distribution of Cities

Geographers have several ways to describe how city populations are distributed. The **rank-size rule** observes that in many countries, the n th-largest city is roughly $1/n$ the size of the largest city. A **primate city** is the opposite situation: one city is disproportionately larger than the second-largest city and dominates national life. A primate city pattern violates the rank-size rule, so the two are alternatives, not partners.

The **gravity model** predicts that interaction between two places increases with their populations and decreases with the distance between them. **Central place theory**, developed by Walter Christaller, explains the size, spacing, and hexagonal market areas of settlements based on the goods and services they provide.

MODEL OR RULE	WHAT IT DESCRIBES
Rank-size rule	Many countries have a regular size ladder: the 2nd city is about half the 1st, the 3rd about a third, and so on.
Primate city	One city dominates far beyond the rest. Breaks the rank-size pattern.
Gravity model	Interaction rises with population size and falls with distance. Bigger and closer means more interaction.
Central place theory	Settlements space themselves around the goods and services they offer, forming hexagonal market areas.

Trap. The gravity model is about interaction, not about the size of any single city. A question giving two city populations and a distance, then asking about movement or flows between them, is pointing at the gravity model.

6.5 The Internal Structure of Cities

The four standard models describe how land uses arrange themselves inside a city. Each was built for a different kind of city, and the exam expects you to match a description to the right one.

The **Burgess concentric-zone model** (1925, Ernest Burgess) says cities grow outward in concentric rings around a central business district: the CBD, then a transition zone, then working-class homes, then middle-class homes, then a commuter zone. The **Hoyt sector model** (1939, Homer Hoyt) says land uses grow outward in wedge-shaped sectors along transportation corridors, so a wealthy residential sector extends outward along a rail line or highway rather than forming a ring.

The **multiple-nuclei model** (1945, Chauncey Harris and Edward Ullman) says cities grow around several separate centers, each with its own specialized function, rather than a single center. The **galactic city model** describes the modern automobile-era city: the CBD declines, development spreads along edge cities and transportation corridors, and land uses scatter like a galaxy across the region.

MODEL	CORE CLAIM
Burgess concentric zone	Land uses form rings around the CBD. Oldest at the center, newest at the edge.
Hoyt sector	Land uses form wedges radiating outward, following transportation routes.
Multiple nuclei	Growth happens around several separate centers, each with a different function. A CBD still exists.
Galactic city	The CBD weakens and development disperses across edge cities and corridors in the auto era.

Trap. Multiple-nuclei and the galactic city model are easy to confuse because both have more than one center. The difference is the CBD. In the multiple-nuclei model the CBD remains one of the nuclei. In the galactic city model the CBD is in decline and the edge cities take over.

6.5 The Internal Structure of Cities, continued

Bid-rent theory explains why the CBD is where it is. Land near the city center is bid up in price, so the highest-value uses (the ones that can afford the most expensive land) occupy central locations and lower-value uses are pushed outward. It is about willingness and ability to pay, not about which use takes up the most space.

Three regional models adapt the framework to cities shaped by colonialism and different development histories. The **Latin American city model** has a wealthy commercial spine extending from the CBD, surrounded by zones of increasing poverty as you move away from the spine. The **Southeast Asian city model** is shaped by colonial ports, with commercial zones along the waterfront and distinct ethnic enclaves. The **African city model** is shaped by colonial history too, often with a colonial CBD, ethnic neighborhoods, and large informal settlements on the periphery.

Trap. Bid-rent theory does not say the center is the most important use or the biggest one. It says the center goes to whoever can pay the most per unit of land. A department store outbids a factory for a downtown corner because retail benefits more from foot traffic, even though the factory might employ more people.

6.6 Density and Land Use

How people build reflects the culture and technology around them. **Residential land use and culture** captures the idea that housing forms reflect and shape a city's culture, its technological capabilities, its cycles of development, and infilling. **Infilling** is developing vacant or underused parcels inside already built-up areas, which raises density without expanding the city outward.

6.7 Infrastructure

Infrastructure and development is the point that a city's roads, water systems, transit, and utilities shape its spatial pattern of economic and social development. Where infrastructure goes, development follows, and where it is missing, development stalls.

6.9 Urban Data

Geographers study cities with two kinds of evidence. **Quantitative urban data** is numerical: census counts, population density, income levels, commuting times, used to measure and compare urban patterns. **Qualitative urban data** is non-numerical: interviews, field observations, residents' narratives, used to understand people's experiences of and attitudes toward urban change.

6.8 Urban Sustainability

Urban planners have a toolkit for making cities less car-dependent and less sprawling. **Mixed land use** is zoning that allows residential, commercial, and sometimes industrial uses in the same area.

Transportation-oriented development (also called transit-oriented development) is building around public-transit hubs so residents depend less on cars. **Smart growth** is the broader set of planning strategies that limit sprawl through compact, walkable, mixed-use development. **New Urbanism** is a design movement that promotes walkable, mixed-use neighborhoods modeled on traditional town forms.

Two tools work at the city edge rather than the center. A **greenbelt** is a ring of open land around a city where development is restricted, used to contain sprawl. A **slow-growth city** deliberately limits the pace or extent of new development, as a sustainability initiative and zoning practice.

The **effects of urban design initiatives** are contested. The case in favor points to reduced sprawl, better walkability and transportation, better and more diverse housing, and improved livability. The criticisms point to increased housing costs, possible de facto segregation, and the loss of historical or place character.

Trap. Greenbelt and urban growth boundary (in 6.11) sound like the same policy but work differently. A greenbelt is a physical ring of preserved open land. An urban growth boundary is a legal line on a map. A question that mentions preserved farmland as a ring is pointing at the greenbelt. A question that mentions a legal restriction on development beyond a line is pointing at the growth boundary.

6.10 Challenges of Urban Changes

City change creates winners and losers, and several key processes describe who gets displaced and how.

Redlining is the discriminatory practice of denying loans or services to residents of certain neighborhoods, often based on race. **Blockbusting** is the practice of persuading homeowners to sell cheaply by warning that a minority group is moving into the neighborhood.

Environmental injustice is the disproportionate exposure of poor and minority communities to pollution and environmental hazards. A **disamenity zone** is the extreme result: an urban area with severe poverty, poor services, and deteriorated housing that investment avoids.

Housing in the developing world often grows outside the legal system. **Squatter settlements** are informal, unauthorized housing areas, often on the urban periphery in developing countries. **Land tenure** is the legal right to use and occupy land, and conflicts over it in large cities have increased.

Governments respond to housing pressure in several ways. **Inclusionary zoning** requires developers to include affordable housing. **Urban renewal** is government-led redevelopment of deteriorated areas, which carries both positive and negative consequences. **Gentrification** is the process by which wealthier residents move into a deteriorated neighborhood, raising property values and often displacing lower-income residents, with both positive and negative consequences.

Fragmentation of government describes how government agencies are dispersed across state, county, city, and neighborhood levels. That functional and geographic fragmentation makes urban problems harder to solve, because no single authority controls the whole picture.

Trap. Gentrification, urban renewal, and blockbusting all involve neighborhood change, but the actors and directions differ. Blockbusting drives white homeowners out by stoking racial fear. Urban renewal is government-led redevelopment. Gentrification is market-driven, with wealthier residents moving in on their own. Match the description to the actor.

6.11 Challenges of Urban Sustainability

Growth itself is a sustainability problem. **Suburban sprawl** is the uncontrolled outward expansion of urban development. The **ecological footprint of cities** is the total environmental impact of a city, including its resource consumption and waste, which extends far beyond the city limits.

Two policies push back on sprawl in different ways. A **brownfield** is abandoned or underused industrial land that may be contaminated; cleaning it up and redeveloping it is a sustainability response. An **urban growth boundary** is a legally defined line beyond which urban development is restricted, used to contain sprawl and protect farmland.

CHALLENGE OR RESPONSE	WHAT IT IS
Suburban sprawl	Uncontrolled outward expansion of development. The problem the other tools address.
Ecological footprint	The full environmental cost of a city: what it consumes and what it wastes.
Brownfield	Old industrial land, possibly contaminated. Redeveloping it adds density without new land.
Urban growth boundary	A legal line. Development goes inside, farmland and open space stay outside.
Greenbelt (6.8)	A physical ring of open land. Works by preservation, not by a legal line.
Infilling (6.6)	Building on vacant parcels inside the existing city. Density without expansion.

Confusions That Cost Points

PAIR	HOW TO KEEP THEM STRAIGHT
Megacity vs metacity	The thresholds are 10 million and 20 million. A city of 15 million is a megacity but not a metacity.
Site vs situation	Site is the physical spot itself, such as a harbor. Situation is the location relative to other places, such as trade routes.
Exurb vs edge city	An exurb is residential and rural, with residents commuting inward. An edge city has its own jobs, offices, and shopping.
Rank-size rule vs primate city	The rank-size rule describes a regular ladder of city sizes. A primate city breaks the ladder by dominating alone. They are alternatives.
Burgess vs Hoyt	Burgess is rings around the CBD. Hoyt is wedges along transportation corridors.
Multiple nuclei vs galactic city	Multiple nuclei keeps the CBD as one of several centers. The galactic city model has the CBD in decline, with edge cities taking over.
Bid-rent theory	The center goes to the use that can pay the most per unit of land, not the largest or most important use.
Gentrification vs urban renewal	Gentrification is market-driven: wealthier residents move in on their own. Urban renewal is government-led redevelopment.
Blockbusting vs redlining	Blockbusting is agents scaring homeowners into selling by warning about incoming minorities. Redlining is lenders and insurers denying services to a neighborhood.
Greenbelt vs urban growth boundary	A greenbelt is a physical ring of preserved open land. A growth boundary is a legal line on a map.
Quantitative vs qualitative data	Quantitative is numerical and measures patterns. Qualitative is interviews and narratives, and captures how people experience change.
Sprawl (6.2) vs suburban sprawl (6.11)	Same process, different framing. In 6.2 it is a new urban form. In 6.11 it is a sustainability problem.

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 city grew because it sits at the point where a navigable river meets the sea, and later because it lies on the rail line connecting two major industrial regions. Which pair best describes these two advantages?

 - A. Site, then situation
 - B. Situation, then site
 - C. Urban hierarchy, then urban sprawl
 - D. Central place, then edge city
- 2.** In a large metropolitan area, the highest-income housing forms a wedge that follows the main commuter rail line outward from downtown. Lower-income housing occupies the wedges between the rail lines. Which model best describes this pattern?

 - A. Burgess concentric-zone model
 - B. Hoyt sector model
 - C. Multiple-nuclei model
 - D. Galactic city model
- 3.** In a certain country, the largest city has 12 million people and the second-largest has 1.5 million. The largest city also houses the national government, the stock exchange, and most of the country's universities. Which concept best describes this city?

 - A. It follows the rank-size rule
 - B. It is a primate city
 - C. It is a world city
 - D. It is an edge city
- 4.** According to bid-rent theory, which land use is most likely to occupy the blocks immediately around a city's central business district?

 - A. The land use that employs the most workers
 - B. The land use that requires the most floor space
 - C. The land use that can pay the highest rent per unit of land
 - D. The land use that is least dependent on foot traffic

- 5.** A bank marks a map of a city and refuses home loans in the neighborhoods inside the marked areas, which are the city's oldest Black neighborhoods. This practice is best described as
- A. blockbusting
 - B. redlining
 - C. gentrification
 - D. inclusionary zoning
- 6.** A metropolitan region draws a legal line on its map: all new housing and commercial development must go inside the line, and farmland outside it is protected from development. This policy is best described as
- A. a greenbelt
 - B. an urban growth boundary
 - C. infilling
 - D. transportation-oriented development
- 7.** A neighborhood of abandoned warehouses is cleaned up and converted to apartments and shops by private developers, and rents rise so much that most longtime residents leave. This process is best described as
- A. urban renewal
 - B. blockbusting
 - C. gentrification
 - D. redlining
- 8.** Two cities have large populations and are 50 miles apart. According to the gravity model, interaction between them is expected to be
- A. low, because the distance is too short for a pattern to form
 - B. high, because the populations are large and the distance is short
 - C. low, because both cities are in the same urban hierarchy
 - D. high, because the rank-size rule predicts it

Answer Key

- 1. A.** The river-and-sea location is the physical character of the place, which is site. The position on the rail line connecting two regions is location relative to other places, which is situation. B reverses the two. C and D name real concepts from the unit, but neither describes why a city is located where it is.
- 2. B.** Wedge-shaped land uses extending outward along transportation corridors is the signature of the Hoyt sector model. A is wrong because concentric rings are Burgess, and the description is wedges, not rings. C is wrong because multiple nuclei requires several separate centers, not one center with wedges. D is wrong because the galactic city model describes a declining CBD and scattered edge cities, not a dominant downtown with sectors.
- 3. B.** A city eight times the size of the second-largest, dominating national institutions, is the definition of a primate city. A is wrong because 12 million to 1.5 million violates the rank-size expectation that the second city is about half the first. C is wrong because world-city status depends on global economic function, and the question gives only national dominance. D is wrong because an edge city is a suburban job node, not a national capital.
- 4. C.** Bid-rent theory says central land goes to whichever use can bid the most per unit of land, since proximity to the center is most valuable there. A confuses employment size with rent-paying ability. B is backwards: large-space uses are pushed outward precisely because they cannot afford central rents. D is backwards: uses least dependent on foot traffic move outward.
- 5. B.** A lender marking a map and denying loans to a neighborhood is redlining. A is wrong because blockbusting is agents scaring homeowners into selling, not lenders denying loans. C is wrong because gentrification is wealthier residents moving in and raising values, the opposite direction. D is wrong because inclusionary zoning requires affordable housing in new development.
- 6. B.** A legal line restricting development beyond it is an urban growth boundary. A is wrong because a greenbelt is a physical ring of preserved open land, not a legal line. C is wrong because infilling is building on vacant parcels inside the city. D is wrong because transportation-oriented development is building around transit hubs.
- 7. C.** Private developers converting a district, with rising rents displacing longtime residents, is market-driven gentrification. A is wrong because urban renewal is government-led redevelopment. B is wrong because blockbusting is agents exploiting racial fears to trigger cheap sales. D is wrong because redlining is the denial of loans or services.
- 8. B.** The gravity model says interaction increases with population and decreases with distance, so large populations at a short distance produce high interaction. A misreads the model: short distance increases interaction, it does not prevent it. C is irrelevant: the urban hierarchy does not enter the gravity calculation. D is wrong because the rank-size rule describes city-size distributions within a country, not flows between places.

One-Page Recall Check

- Define site and situation, and give one example of each.
- List the five drivers of urbanization named in this unit.
- Give the population thresholds for a megacity and a metacity.
- Distinguish an exurb, an edge city, and a boomburb.
- Explain what a world city does in the urban hierarchy.
- State the rank-size rule and explain why a primate city breaks it.
- State the gravity model in terms of population and distance.
- Describe what central place theory says about the spacing of settlements.
- Sketch the Burgess, Hoyt, multiple-nuclei, and galactic city models, and name what distinguishes each from the others.
- Explain bid-rent theory in one sentence.
- Describe the signature feature of each regional model: Latin American, Southeast Asian, and African.
- Define infilling and explain why it counts as sustainable.
- Distinguish mixed land use, transit-oriented development, smart growth, and New Urbanism.
- Contrast the arguments for and against urban design initiatives.
- Define quantitative and qualitative urban data, and say what each is used for.
- Distinguish redlining, blockbusting, gentrification, and urban renewal by who acts and in which direction.
- Define disamenity zone, squatter settlement, and land tenure.
- Explain what inclusionary zoning requires and how slow-growth cities differ from it.
- Contrast a greenbelt with an urban growth boundary.
- Define brownfield and suburban sprawl, and explain the ecological footprint of cities.

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 through the Unit 6 cards, which cover the terms in this guide and target the same traps named here. If you have a test date, add it in the Test Planner so your review sessions are paced for you. You can also start your next review with a Brain Dump, then check what you missed against this guide.

Key terms for this unit

Site and situation, Site, Situation, Drivers of urbanization, Megacity, Metacity, Urban sprawl, Edge city, Exurb, Boomburb, World city, Urban hierarchy, Global urban networks, Rank-size rule, Primate city, Gravity model, Central place theory, Burgess concentric-zone model, Hoyt sector model, Multiple-nuclei model, Galactic city model, Bid-rent theory (urban), Latin American city model, Southeast Asian city model, African city model, Residential land use and culture, Infilling, Infrastructure and development, Mixed land use, Transportation-oriented development, Smart growth, New Urbanism, Greenbelt, Effects of urban design initiatives, Slow-growth cities, Quantitative urban data, Qualitative urban data, Redlining, Blockbusting, Environmental injustice, Disamenity zone, Squatter settlements, Land tenure, Inclusionary zoning, Urban renewal, Gentrification, Fragmentation of government, Suburban sprawl, Ecological footprint of cities, Brownfield, Urban growth boundary