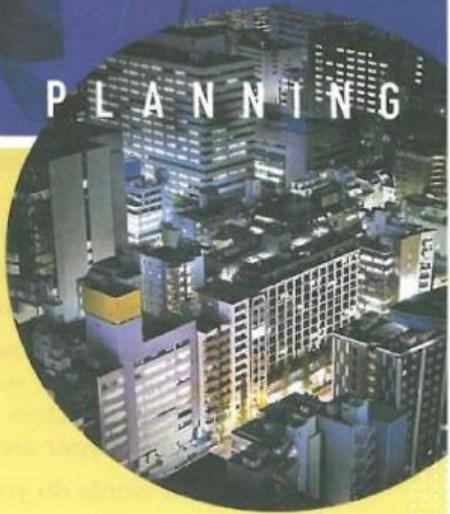


UNIT

2

Megacities



In this unit, you will

- read about the development of cities and megacities—
- and what the future holds for urban life around the globe.
- review previewing and predicting a reading selection.
- increase your understanding of the target academic words for this unit.

READING SKILLS Identifying Main Ideas vs. Supporting Details

Self-Assessment

Think about how well you know each target word, and check (✓) the appropriate column. I have...

TARGET WORDS

AWL

- 🔑 communicate
- 🔑 define
- 🔑 despite
- extract
- globe
- 🔑 major
- 🔑 migrate
- 🔑 network
- 🔑 perspective
- 🔑 rely
- 🔑 remove
- 🔑 source
- 🔑 status
- 🔑 survive

	never seen the word before	seen the word but am not sure what it means	seen the word and understand what it means	used the word, but am not sure if correctly	used the word confidently in either speaking or writing	used the word confidently in both speaking and writing
--	----------------------------	---	--	---	---	--

Outside the Reading

What do you know about urban planning?
Watch the video on the student website to find out more.

OXFORD 3000™ keywords



Before You Read

Read these questions. Discuss your answers in a small group.

1. What is the biggest city you've ever visited? What did you like about it? Was there anything you didn't like? Why or why not?
2. How big is your city—in geographic size and in population? Would you say your city is small, medium-sized, large, or extremely large? Why?
3. Think about the cities near where you live. How near are other major cities? Are there any smaller suburban communities surrounding your city? What reasons or factors can you think of to explain the pattern of urban development in your area?
4. What other words do you know that start with the prefix *mega*-?

MORE WORDS YOU'LL NEED

ecopolis: a city considered in relationship to its environment (from the Greek "eco," meaning *house*, or more broadly *surroundings*, and "polis," meaning *city*)

megalopolis: an urban region, especially one consisting of several large cities and suburbs that are all connected to each other (from the Greek "mega," meaning *large*, and "polis," meaning *city*)

REVIEW A SKILL Previewing and Predicting (See p. 2)

Preview and predict the topic of Reading 1, using skills practiced in Unit 1. Look at the illustrations, scan for frequently used words and names of places, and skim the final paragraph.

 **Read**

This article from *Newsweek* magazine is about the rise of megacities.

The New Megalopolis

Our focus on cities is wrong. Growth and innovation come from new urban corridors.

China isn't the world's most ferocious new economic competitor—the exploding east-coast corridor, from Beijing to Shanghai, is. India as a whole is not developing high-tech industries and attracting jobs, but the booming mega-region stretching from Bangalore to Hyderabad is. Across the world, in fact, nations don't spur growth so much as dynamic regions—modern versions of the original "megalopolis," a term coined by the geographer Jean Gottman to identify

the sprawling Boston-New York-Washington economic power corridor in the United States.

The New Megas are the real economic organizing units of the world and the **major sources of global wealth**, attracting a large share of its talent and generating the most innovation. They take shape as powerful complexes of multiple cities and suburbs, often stretching across national borders—forming a vast expanse of trade, transport, **communications**, and talent. Yet, **despite** the

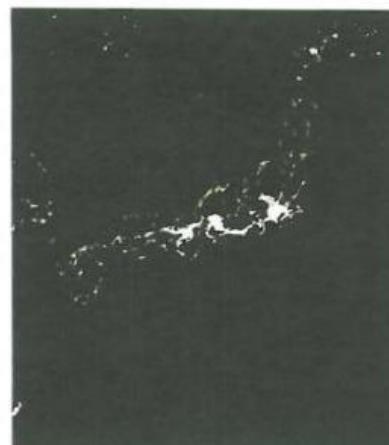
fact that the rise of regions has been apparent for more than a 25 decade, no one has collected systematic information on them—not the World Bank, not the IMF,¹ not the United Nations, not the **global** consulting firms.

30 That's why a team of geographers set about building a world map of the New Megas shaped by satellite images of the world at night, using light 35 emissions to **define** the outlines of each region, and additional data in categories such as population and economic growth to chart their relative peak 40 strengths and dynamism.²

The map makes it clear that the **global** economy takes shape around perhaps 20 great Megas scattered throughout the world. These regions are home to just 10 percent of total 45 world population, 660 million people, but produce half of all economic activity, two-thirds of world-class scientific activity, and three quarters of **global** innovations. The great urbanologist Jane Jacobs was the first to 50 describe why megalopolises grow. When people **migrate** to one place, they all become more productive. And the place itself becomes much more productive, because collective creativity grows exponentially.³ Ideas flow more freely, 55 are honed⁴ more sharply, and can be put into practice more quickly.

There is, however, a tipping point.⁵ The forces of price and congestion begin pushing people away from the center. But make no 60 mistake, this has nothing to do with the “decentralization of work,” as many have argued. The huge economic advantages of clustering still guide the process, which is why second cities emerge near big cities or in the corridors 65 between them, not in the middle of nowhere.

The first region to achieve Mega **status** and still the biggest Mega in economic terms



Satellite images of the Boston-to-Washington Mega-region in the United States (left) and the greater Tokyo Mega-region in Japan (right).

is the Boston-to-Washington corridor in the U.S. In 1961 it was home to about 32 million 70 people; by 2025 its population is expected to rise to 58 million, or about 16 percent of all the U.S. population. The region generates \$2.6 trillion in economic activity, making it the world's fourth largest economy, bigger than 75 France or the United Kingdom. Next in line is Chi-Pitts, the great Midwestern Mega running from Chicago to Detroit, Cleveland, and Pittsburgh, with \$2.1 trillion in economic activity. Three of the power centers of the U.S. economy 80 even stretch beyond American borders: So-Cal runs from Los Angeles to San Diego across the Mexican border to Tijuana; Tor-Buff-Chester sprawls from Toronto, Ontario, to Rochester, New York; and Cascadia runs from Portland, Oregon, 85 to Vancouver, British Columbia.

Aside from the island-bound financial center of Greater London, Europe's **major** economic engines do not **rely** on old borders to **define** themselves. The Euro-Lowlands cuts across four 90 nations: the Netherlands, Belgium, Germany, and France. The Euro-Sunbelt stretches from Barcelona to Marseille, attracting people and firms with competitive costs and the Mediterranean lifestyle. Japan is less a country 95 than a **network** of linked Mega-regions, anchored by Greater Tokyo: indeed, a close look at the light-emissions map shows that its three

¹ IMF: International Monetary Fund, a financial monitoring and regulating organization

² dynamism: the pattern or process of change, growth, and activity

³ exponentially: extremely rapidly

⁴ honed: sharpened

⁵ tipping point: the moment at which a trend reaches its peak and starts to decline

major metro regions are blurring into a megalopolis of more than 100 million people.

100 While Mega-regions power advanced economies, they literally **define** the emerging nations. The world's largest concentration of megacities, one of ten mega-corridors in India, stretches from northwest India to Bangladesh 105 across the Indo-Gangetic plain and links a dozen **major** metropolitan areas. If you **removed** its Megas, China would be virtually meaningless as an economic category. What matters are the 110 Shang-King (Shanghai to Nanjing) and Hong-Zen (Hong Kong to Shenzhen) corridors and the area of Greater Beijing. Their combined regional

populations totaled more than 274 million people in 2010. These three Megas account for most of Chinese economic output, attract most 115 of its talent, and generate the great **majority** of its innovations.

Instead of technology helping to spread economic opportunity and lift many more boats, economic power is concentrating in a small 120 number of key regions. It's time for political and economic leadership to wake up to this new reality. It makes little sense to dwell on individual cities or countries anymore, when the real engines of **survival**, innovation, and growth 125 are the New Megas. ■

Reading Comprehension

Mark each sentence as **T** (true) or **F** (false) according to the information in Reading 1. In your notebook, cite the location of the information by line number, and correct each false statement.

- 1. Across the globe, nations create economic growth more than regions.
- 2. Major international institutions such as the United Nations have been systematically collecting information about megacities.
- 3. There are about 20 megacities scattered around the globe.
- 4. The biggest mega-region is Chicago to Pittsburgh, in the United States.
- 5. Mega-regions sometimes ignore borders and include more than one country.
- 6. The three major Megas in China account for almost all of China's economic power.
- 7. When older cities get too large, new cities emerge in the middle of nowhere.
- 8. According to urbanologist Jane Jacobs, people become more productive and creative when they gather together in cities.

READING SKILL

Identifying Main Ideas vs. Supporting Details

LEARN

Writers offer specific details and examples to clarify and support their general ideas. When reading a text, it is helpful to identify both the main ideas and the supporting details and note these in a simple outline form.

APPLY

A. Read these excerpts from Reading 1. Put a check (✓) next to the main ideas.

- Nations don't spur growth as much as dynamic regions.
- Today, its population has risen to 58 million.

- Europe's major economic engines have even less respect for old borders.
- The New Megas are the real economic organizing units of the world.
- The global economy takes shape around perhaps 20 great Megas.
- What matters are Shang-King (Shanghai to Nanjing) and Hong-Zen (Hong Kong to Shenzhen) corridors and the area of Greater Beijing.
- The region generates \$2.6 trillion in economic activity.

B. Reading 1 has nine paragraphs. What is the writer's main purpose in each? Write some notes (no sentences necessary) about the focus of each paragraph.

Paragraph 1: *explain idea of "mega"; give some examples of megas*

Paragraph 2: _____

Paragraph 3: _____

Paragraph 4: _____

Paragraph 5: _____

Paragraph 6: _____

Paragraph 7: _____

Paragraph 8: _____

Paragraph 9: _____

C. In your notebook, summarize the main idea of the entire article.

Vocabulary Activities STEP I: Word Level

A *network* is “an interconnected or interrelated chain, group, or system.” There are various types of *networks*. The noun form is frequently combined with other nouns to make collocations, for example, a *computer network*.

The verb form of *network* means “to create social communication channels and mutual support systems.” People *network* to advance their careers or to improve their social lives.



A. Match the type of network with its example. Use your dictionary to help you understand new words. Compare answers with a partner.

— 1. CCTV (China Central) or BBC	a. computer network
— 2. a company's intranet	b. transportation network
— 3. the Bill and Melinda Gates Foundation	c. television network
— 4. the Paris metro	d. communications network
— 5. the human central nervous system	e. job network
— 6. friends you meet through other friends	f. neural network
— 7. satellite mobile phones	g. social network
— 8. people you work with	h. charity network

The word *migrate* means “move from one area to another.” It is usually used to describe the seasonal movement of all types of migratory species.

Salmon **migrate** to their birthplace every spring to lay their eggs.

Note: *Migrate* is the root for two other words you probably know that describe movement of people from one country to another: *immigrate* (to move into another country) and *emigrate* (to move out of your own country). In addition, the related word *migrant* is used to describe workers who move from one area to another searching for work.

CORPUS

B. With a partner, think of three species (type of animal, bird, fish, or insect) that migrate, and then discuss what you know about them. Record your notes below. For each species, consider these things:

- departure point
- destination
- length of trip in time and distance
- how it finds its way
- the purpose of the migration

1. Species: _____

Notes: _____

2. Species: _____

Notes: _____

3. Species: _____

Notes: _____

C. Complete the sentences about megacities using the target vocabulary in the box. Use each item one time. The synonyms in parentheses can help you.

communications	global	network	survival
define	migrate	rely on	

1. Megacities form a vast expanse of trade, transport, _____, (message systems), innovation, and talent.
2. The maps make it clear that the _____ economy takes shape (worldwide) around perhaps 20 great Megas.
3. Mega-regions compose a major part of advanced economies and actually _____ several emerging nations.
(give complete form to)

4. Japan is less a country than a _____ of Mega-regions, anchored by Greater Tokyo.
(interconnected system)
5. When many people _____ to one place, they all become more productive.
(move)
6. The _____ of megacities will depend on their ability to adapt to the needs of their people and the environment.
(continued existence)
7. Although many cities _____ imports for much of their food, fast-growing megacities are often incapable of organizing the food imports they need.
(count on)

D. What are some sources for these items? Think globally and locally. Discuss your answers in small groups. Choose the three most significant sources for each item.

1. information about traffic conditions
2. information for an essay on electricity usage
3. pollution
4. creativity

Vocabulary Activities STEP II: Sentence Level

E. Status has several meanings. Write your own definitions based on these example sentences. Do not use your dictionary. Be prepared to compare and discuss your definitions with a partner. You may check your dictionaries afterward.

1. The application asked for her age, her place of birth, her marital status, and a lot of other personal details.

2. Celebrities often have a higher status in society than regular people.

3. The foreman reported the status of the construction of the new administration building to the committee. He said it should be finished within six months.

The verb *rely* is actually a verb phrase because it always takes the preposition *on*. There are two typical structures for this verb phrase: “*Rely on* someone (or something) *for* something” is one:

City planners **rely on** experts for data on population growth, traffic patterns, and ecological impact.

“*Rely on* someone (or something) *to do* something” is another:

As cities become more crowded, residents **rely on** public transportation more and more to get around town.



Word Form Chart

Noun	Verb	Adjective	Adverb
reliance		reliable	
relying (gerund)	rely (on)	unreliable	
reliability			reliably

F. Complete these sentences using a form of *rely*. Be sure to use the verb phrase *rely on* where appropriate.

1. He _____ his parents for money.
2. She always does what she promises to do. She is completely _____.
3. He rarely asks for help. He believes that self-_____ is better than _____ on others.
4. His new car often breaks down. He can't depend on it; it is very _____.
5. She _____ her friends to tell her the truth.
6. If you want to leave at 2:30, tell Mika to be here at 2:00. She is _____ late for everything!
7. This car was rated #1 in _____ and safety by automotive analysts.

Now write four sentences of your own using four different forms of *rely*.

1. Unreliable technology doesn't survive for long in major global communications networks.
2. _____
3. _____
4. _____
5. _____

Before You Read

Read these questions. Be prepared to discuss your answers.

1. Where do the people in your city get all the food they need? What do they do with all their garbage?
2. What particular ecological challenges does your city have to deal with? What special policies or regulations are in place to help the city cope with these challenges? What do you think should be done to cope with them?
3. What impact do big cities have on the environment? Give examples to support your ideas.

 **Read**

This online article from *New Scientist* magazine discusses the ecological advantages of urban living.

Ecopolis Now

Forget the rural idyll. Urban living may be the best way to save the planet.

A hundred years ago, the largest city in the world was London, with a population of 6.5 million. Today it is dwarfed by Tokyo. With barely a quarter the population of London a century ago, ⁵ the Tokyo metropolitan area has since mushroomed to 35 million, propelling it to first place in the **global** city league table. Tokyo's phenomenal growth is largely due to a single factor: **migration** from the countryside to the ¹⁰ city. It is just one of many to have overtaken London, which with a population of 7.5 million today doesn't even make the top 20.

This rural-to-urban **migration** can now be seen in scores of cities around the **globe**. And it has ¹⁵ brought us to a pivotal moment in human history. In 1900, most people lived in the countryside, with a little over 10 percent of the world's population living in cities. From next year, the UN Population Division predicts that for the first time ²⁰ in history, more people will live in cities than in the country, and the biggest growth will be in "megacities," with populations over 10 million.

The meteoric growth of megacities—there are now more than 25 in total—has brought with it

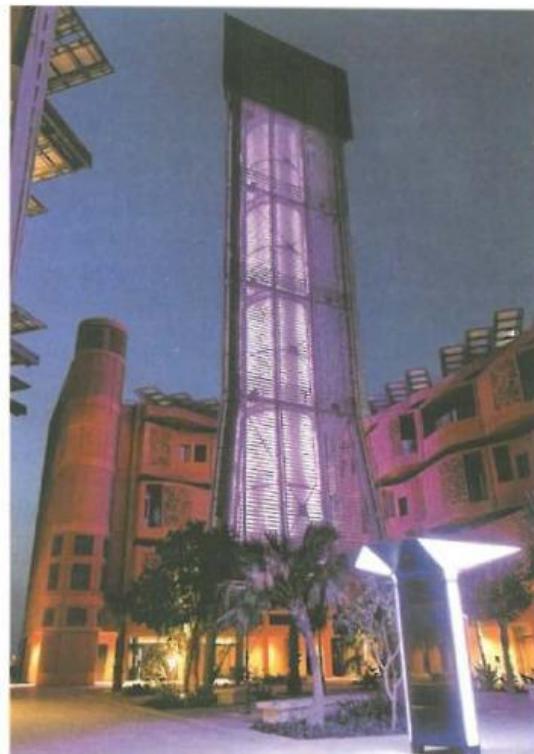
²⁵ huge environmental and social problems. Cities occupy just two percent of the land surface of the Earth but consume three-quarters of the resources that are used up each year, expelling the half-digested remains ³⁰ in clouds of greenhouse gases, billions of tons of solid waste, and rivers of toxic sewage. Their inhabitants are making ruinous demands on soils and water supplies for food and on forests for timber and paper. ³⁵ Returning the world's population to the countryside isn't an option. Dividing up the planet into plots of land on which we could all **survive** self-sufficiently would create its own natural disasters, not to mention being highly ⁴⁰ unlikely to ever happen. If we are to protect what is left of nature, and meet the demand to improve the quality of living for the world's developing nations, a new form of city living is the only option. The size of a city creates ⁴⁵ economies of scale for things such as energy generation, recycling, and public transport. It should even be possible for cities to partly feed themselves. Far from being parasites on

the world, cities could hold the key to sustainable living for the world's booming population—if they are built right.

Fortunately, governments, planners, architects, and engineers are beginning to wake up to this idea, and are dreaming up new ways to green the megacities. Their approaches **rely** on two main principles: recycle whatever possible and **remove** as many cars as possible. So as well as developing energy-efficient buildings, emphasis is being placed on increasing the use of public transport and redesigning how cities are organized to integrate work and living areas into a single neighborhood, rather than separating cities into residential, commercial, and industrial zones.

The big ideas are still being **defined**, but many cities already have showcase¹ eco-projects. For example, at the new home of Melbourne city council in Australia, hanging gardens and water fountains cool the air, wind turbines and solar cells generate up to 85 percent of the electricity used in the building, and rooftop rainwater collectors supply 70 percent of its water needs. In Berlin, Germany's new Reichstag parliament building cut its carbon dioxide emissions by 94 percent by **relying** on carbon-neutral vegetable oil as its energy **source**. In San Diego, California, garbage trucks run on methane **extracted** from the landfills they deliver to. In Austria, 1,500 free bicycles have been distributed across Vienna. Reykjavik in Iceland is among the pioneers of hydrogen-powered public transport, and Shanghai is subsidizing the installation of 100,000 rooftop solar panels. In Masdar, an emerging sustainable eco-city on the outskirts of Abu Dhabi in the United Arab Emirates, a modern version of the Arabian wind tower is used to cool urban plazas.

Planners and architects now agree that to improve the social and environmental condition of cities the top priority is to cut car use. They say zero-emission cars running on electricity or burning hydrogen are not enough. "Automobiles still require massive **networks** of streets, freeways, and parking structures to serve congested cities and far-flung suburbs," says Richard Register, founder of the nonprofit



In Masdar, this modern wind tower cools urban plazas.

⁹⁵ campaigning organization EcoCity Builders in Oakland, California. What is needed is a wholesale rethink of how new cities are laid out—and how existing ones expand—to minimize the need for cars in the first place.

¹⁰⁰ One way of achieving this is to build cities with multiple centers where people live close to their work in high-rise blocks that are also near public transport hubs. In parts of the world this is already taking shape.

¹⁰⁵ While planners look at how to cut back the energy consumption of big cities, at the other end of the scale are shanty towns—organically evolved and self-built by millions of people in the developing world without a planner in sight.

¹¹⁰ These shanties meet many of the ideals of eco-city designers. They are high-density but low-rise; their lanes and alleys are largely pedestrianized; and many of their inhabitants recycle waste materials from the wider city.

¹¹⁵ From a purely ecological **perspective**, shanties and their inhabitants are a good example of the new, green urban metabolism.² **Despite**

¹showcase: publicized in a positive way

²metabolism: way of using energy

their sanitary and security failings, they often have a social vibrancy and sound ecological **status** that ¹²⁰ gets lost in most planned urban environments.

So perhaps something can be taken from the chaos and decentralized spontaneity embodied in shanties, and combined with the planned infrastructure of a designed eco-city. Cities built ¹²⁵ without extensive high rises can still be dense

enough to make life without a car profitable, and they can retain the economies of scale needed for the new metabolism built around efficient recycling of everything from sewage ¹³⁰ to sandwich wrappers. At the same time, they need to remain flexible enough for people to adapt them to the way they want to live.

Reading Comprehension

Mark each sentence as **T** (true) or **F** (false) according to the information in Reading 2, and locate the answer by line number. Correct each false statement in your notebook.

- 1. Urban migration is a global trend.
- 2. Megacities have brought about few ecological or social problems.
- 3. Returning to the countryside is a good alternative for modern city dwellers if megacities create significant problems.
- 4. Governments and planners know that megacities need to become more ecology-minded.
- 5. The top priority of urban planners is to decrease car use.
- 6. Planners are trying to minimize the need for cars by rethinking the way cities are laid out.
- 7. From a purely ecological perspective, unplanned shanty towns are possible models for the future.
- 8. Megacities are not expected to grow much more than they already have.

READING SKILL

Identifying Main Ideas vs. Supporting Details

LEARN

Reread the article on pages 25–27. As you read each paragraph, think about the writer's main purpose. Then create an outline below by identifying the main ideas and supporting details.

Paragraph 1, Main Idea: Tokyo is now the biggest city in the world.

Supporting detail: It has 35 million people.

Supporting detail: It's much bigger than London, a former #1.

Paragraph 2, Main Idea: _____

Supporting detail: _____

Supporting detail: _____

Paragraph 3, Main Idea: _____

Supporting detail: _____

Supporting detail: _____

Paragraph 4, Main Idea: _____

Supporting detail: _____

Supporting detail: _____

Paragraph 5, Main Idea: _____

Supporting detail: _____

Supporting detail: _____

Paragraph 6, Main Idea: _____

Supporting detail: _____

Supporting detail: _____

Paragraph 7, Main Idea: _____

Supporting detail: _____

Supporting detail: _____

Paragraph 8, Main Idea: _____

Supporting detail: _____

Supporting detail: _____

Paragraph 9, Main Idea: _____

Supporting detail: _____

Supporting detail: _____

Now, in your notebook, summarize the main idea of the entire article:

Vocabulary Activities **STEP I: Word Level**

A. With a partner, complete the word form chart. Use your dictionary to help you. Then complete the sentences that follow using the correct form of *communicate*.

Word Form Chart for <i>Communicate</i>		
Noun	Verb	Adjective
1. (a person): _____		
2. (thing, singular): _____	communicate	1. _____
3. (thing, plural): _____		2. communicable

1. He talked openly and honestly about the problem. He was very _____.
2. She speaks clearly and enthusiastically. She's an effective _____.
3. Regular _____ is an important part of any business or social relationship.
4. Computers and cell phones have completely changed modern _____.
5. The committee members disagree, but they must _____ with each other in order to reach a compromise and settle the issue.
6. Some diseases are passed genetically from parent to child. Others are _____—they pass from one person to another through contact.

B. Complete these sentences from another *New Scientist* article, “Urban Appetite,” using the target vocabulary in the box. Use each item once.

communications
defined
despite

extracting
globe
major

network
rely
sources

status
survived

1. The megacity is _____ as a city with a population of more than ten million.
(specifically described)
2. Sometime around 1940, New York City was the first to reach megacity
(rank or standing)
3. Extensive transport networks, the boom in cheap _____, and _____ cultural changes in work and living have contributed to the rise of megacities.
(technological message systems)
4. Feeding a city is not easy. Unable or unwilling to _____
on distant _____ for food, many cities are substantially
(depend)
(supply origins) feeding themselves.
5. In the early 1990s, the Bosnian capital of Sarajevo _____ a siege
(stayed alive) by cultivating its wasteland.
6. Water managers believe that governments should make city sewage safe for irrigation and fertilization by _____ disease-causing pathogens
(taking out) while leaving the nutrients.
7. “Eco-cities must be farming cities,” says Jac Smit, president of UAN, the Urban Agriculture _____ run by the United Nations Development Program.
(interconnected group)
8. _____ the _____ social and ecological challenges
(even though there are) _____ they present, megacities around the _____ can and must be
(very big)
(earth) jointly adapted to both people and planet.

C. Give three examples of these things. Discuss your answers with a partner. Why do you think your examples are *major*?

1. a major artist: Leonardo da Vinci

2. a major river: _____

3. a major catastrophe: _____

4. a major scientific achievement: _____

5. a major improvement in human life: _____

The word *major* also has an academic meaning. As a noun, it means “a field of study chosen as an academic specialty.” It can also describe a student specializing in such studies.

*He finally decided on urban planning as a **major**.*

*He is an architecture **major**.*

As a verb, *major* means “to pursue academic studies in a particular subject.”

*She is **majoring** in mathematics.*

Some students major in two subjects. This is called *double majoring* and students are called *double majors*.

*He is double **majoring** in political science and geography.*

CORPUS

D. Imagine your friends ask you for advice about what major they should choose. For each profession, which major(s) would you recommend? Discuss your reasons in a small group.

1. humanitarian aid worker	4. executive assistant
2. factory pollution inspector	5. magazine editor
3. tax collector	6. television producer

Vocabulary Activities STEP II: Sentence Level

Despite is a preposition used to show contrasts or opposites of action, thought, or expectation.

Despite their sanitary and security failings, shanty towns often have social vibrancy and sound ecological status.

You can also use the phrase *the fact that* to connect clauses.

Despite the fact that the rise of regions has been apparent for more than a decade, no one has collected systematic information on them.

Note: *In spite of* has the exact same meaning as *despite* and can be used in the same grammatical structures.

In spite of their sanitary and security failings, shanty towns often have social vibrancy and sound ecological status.

In spite of the fact that the rise of regions has been apparent for more than a decade, no one has collected systematic information on them.

CORPUS

E. Write four sentences featuring information you have learned about cities. Use the words in parentheses in your sentences.

1. (despite)

2. (in spite of)

3. (despite the fact that)

4. (in spite of the fact that)

F. Read the definitions of *perspective*. Decide which meaning applies to each sample sentence. Then rewrite the sample sentences without using the target word.

- a. creating the appearance of objects in depth on a flat surface
- b. the ability to view things in their true relation or relative importance
- c. the viewpoint or position of a particular person or group

— 1. It was difficult for the mayor to maintain a realistic perspective of the traffic problem after she was in a car accident.

— 2. The students are using a new computer program that depicts city streets and buildings in perspective.

— 3. From the environmental group's perspective, any law allowing cars into the city center should be opposed as unsafe and unhealthy for citizens.
