

Chapter 1

EDGES

EDGES

COMBATTING URBAN SPRAWL!

Design Challenge:

Urban sprawl causes lots of problems. We need your help to design a *compact city with edges!*

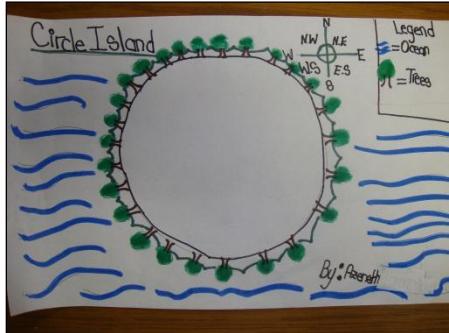


The ocean and mountains form spectacular natural edges for Vancouver, British Columbia (Canada).

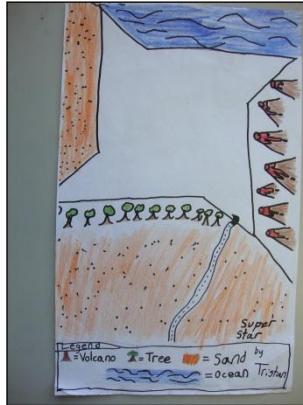
DESIGN CHALLENGE ASSIGNMENT

DESIGN THE EDGES OF A NEW CITY!

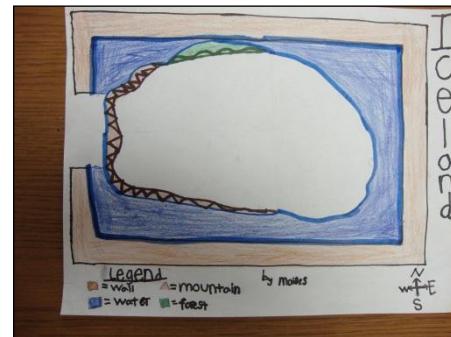
1. DECIDE WHERE YOUR CITY WILL BE LOCATED.
(On an island, peninsula or hilltop? In a valley or canyon? Near a river, lake or ocean? Or somewhere else?)
2. DECIDE IF YOUR CITY WILL HAVE *NATURAL EDGES* (such as a river or hills), *MAN-MADE EDGES* (such as a greenbelt or walls), OR A COMBINATION OF BOTH.
3. MAKE A MAP OF YOUR CITY'S EDGES *LIGHTLY IN PENCIL* (so that you can easily erase any parts you decide to change). You can show details of what is around your city, but you should leave the inside blank for future urban design projects. Leave a one-inch margin on all sides of the paper so that the design is not cut off when it is photocopied.
4. *WHEN YOU ARE SATISFIED WITH YOUR DESIGN, GO OVER YOUR LINES AND WORDS IN BLACK MARKER* (so that you can make three photocopies of your map for future urban design challenges). Although you must leave the inside blank, you can color the details outside the edges of your city (using markers or colored pencils).



by Azeneth



by Tristan



by Moises

***Teacher's Note: Make three photocopies of each student's map to use for future assignments.

EXTRA CHALLENGE

Explain how your city will accommodate future population growth. Will you extend patterns such as *grids** or *concentric circles** beyond your city's edges? Or will you increase *density** with taller buildings and *infill development**? Will you develop *satellite cities** or *linear cities** connected with special transportation systems? Or do you have another idea?

*Use the Internet to find out what these terms mean

WHAT ARE EDGES?

EDGES ARE WHERE CITIES END.

Edges are boundaries between the city and its surroundings.

Edges can be natural features such as rivers and hills.

Or they can be man-made such as medieval walls and greenbelts.

The contrast between a city and its surroundings is especially dramatic when the city suddenly ends at a strong edge such as a shoreline or a wall.



Artwork by Emilio Lopez Marchena

The edges of Avila, Spain, include medieval walls and a river.

WHERE WILL YOUR CITY BE LOCATED?



Photo of exhibit at the Caja Granada Museum in Granada, Spain

On an island or a peninsula?
Near a river, lake, or ocean?
On a plateau, plain, hillside, or cliff?
In a valley or a canyon?

OR DO YOU HAVE ANOTHER IDEA?

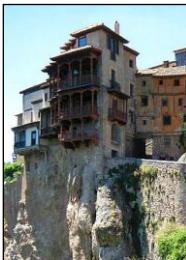
*****Teacher's Note:** You can find more pictures of geographic features to go with this lesson (and subsequent lessons) on the Internet using *Google Images*, in travel guides, and in *National Geographic magazine*.

NATURAL EDGES

Landforms/Topography: Mountains, hills, valleys, canyons, cliffs, plateaus...



Frigiliana, Spain



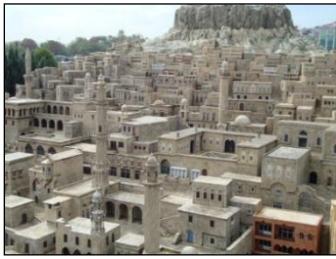
Ronda, Spain



Santa Barbara, California (USA)



Anatolia, Turkey



Mardin, Turkey



Exhibit at *Miniaturk* in Istanbul, Turkey



South San Francisco, California (USA)

Bodies of water and landforms defined by bodies of water:

Rivers, lakes, marshes, oceans, islands, peninsulas...



Amsterdam, Netherlands



Dublin, Ireland



Istanbul, Turkey



Istanbul, Turkey

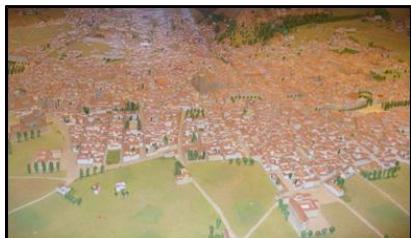


Beirut, Lebanon



Shanghai, China

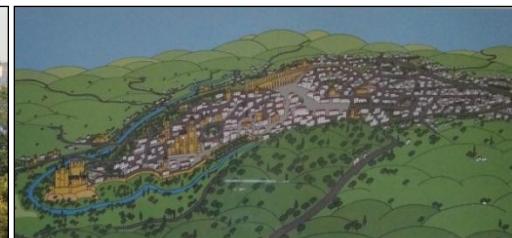
Vegetations: Countryside or wilderness such as forests, deserts, grasslands...



Model of Granada, Caja Granada Museum (Spain)



Istanbul, Turkey



Segovia, Spain (artwork by Emilio Lopez Marchena)

MAN-MADE EDGES

Even though man-made edges are built or designed by people, they often coincide with natural features such as shorelines and changes in elevation.

Examples of man-made edges include: Walls & moats, farmland & pastures, greenbelts, gardens, parks & landscaping, Signs & lighting, an abrupt end to the built-up area, and transportation corridors such as canals.



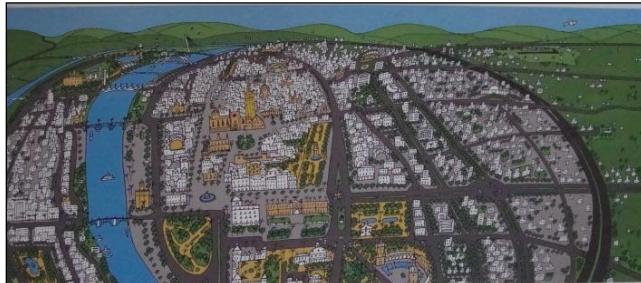
Walls of Segovia, Spain



Exhibit at Topkapi Palace in Istanbul, Turkey



Greenbelt in New Orleans, Louisiana (USA)



Agricultural areas around Sevilla, Spain (Artwork by Emilio LopezMarchena)



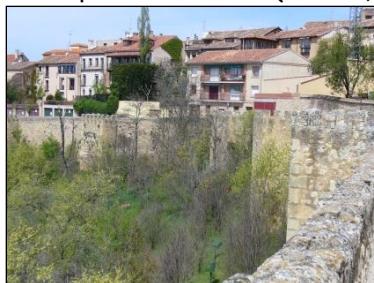
New Orleans map at Cabildo Museum (Louisiana, USA)



Exhibit at Miniaturk in Istanbul, Turkey



Exhibit at British Museum in London, UK



Greenbelt and walls of Segovia, Spain



Canal in Beijing, China

Exhibit at *Miniatürk* in Istanbul, Turkey

Exhibit at *Miniatürk* in Istanbul, Turkey

KEY POINTS

1. City edges can be:

- Bodies of water (such as an ocean, river, or lake)
- Landforms (such as mountains and hills)
- Manmade structures (such as buildings, railroad tracks, walls, or highways)
- Arbitrary lines that people make up

2. Not all cities have clear edges. Urban sprawl erases edges as it continues to expand and reshape the city edges.

Discussion Questions

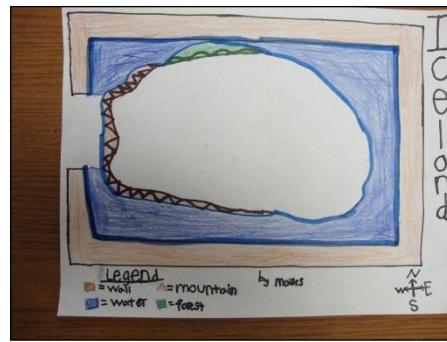
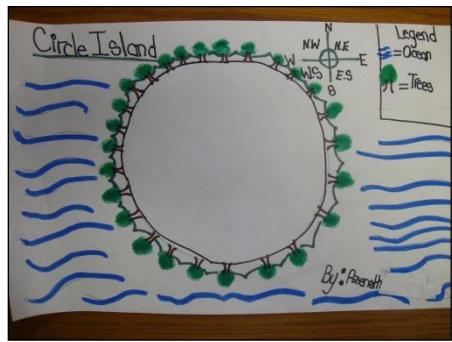
1. What kinds of edges does your city have?

2. What kinds of edges do other cities you know about have?

SOCIAL STUDIES EXTENSION

MAP TIPS

- Use *map symbols* to show features such as mountains or bodies of water.
- Include a *legend* to explain the symbols (also called a *map key*).
- Use a *compass rose* to show north, south, east, and west.
- Don't forget to add a *map title*. The map title should be the name of your city (the name should be meaningful and creative!).



LANGUAGE ARTS EXTENSIONS

WRITING

WRITE A PARAGRAPH ABOUT YOUR DESIGN

- **TOPIC SENTENCE:** Explain what “edges” are.
- **DETAILS:** Describe your city’s edges and tell what makes them interesting, unique, surprising, or important.
- **CONCLUDING SENTENCE:** Explain how the edges you designed will make your city *kid-friendly* and *green*.

WORD WORK

*SOURCES: *Merriam-Webster Children's Dictionary* and *The Clear and Simple Thesaurus Dictionary* by Harriet Wittels and Joan Greisman

EDGES: Plural of *edge*

Pronunciation: \'ej\

Part of Speech: noun

Definitions: *a line or a place where something ends*

Synonyms: *boundary, city limit, perimeter, border, periphery, side*

Teacher’s Note: You can adapt this page to meet your grade level standards and classroom needs. Ideas include putting the words in alphabetical order, synonyms/antonyms, definitions, sentences, singular/plural, parts of speech, using words in prepositional phrases/similes/sentences with conjunctions, syllables, prefixes/suffixes/word origins/word families.

VOCABULARY

edge

boundary

border

city limits

urban

suburban

rural

sprawl

natural

periphery

perimeter

IN DEPTH: WHY ARE EDGES IMPORTANT?**S P R A W L**

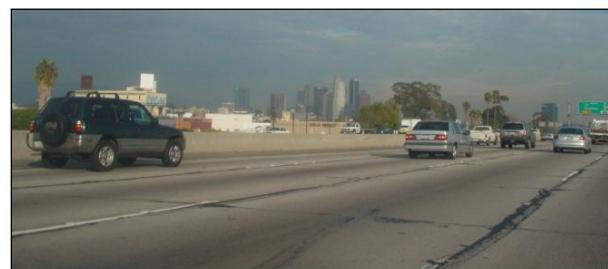
Urban sprawl is when cities spread out so far that they do not have clear edges. Sprawl has become a major prob-



lem since the invention of the automobile. People with cars can live and work very far from the center of the city.



ABOVE: Shanghai, China **BELLOW:** Freeways in Los Angeles, California (USA)



PROBLEMS RELATED TO URBAN SPRAWL

FOSSIL FUELS, POLLUTION, AND GLOBAL WARMING: Cars use *fossil fuels*, which create air pollution and contribute to global warming. Furthermore, fossil fuels are finite. That means we will run out of them in the future.

LAND CONSUMPTION: The more that a city spreads out, the more farmland and wilderness it destroys. This results in the loss of habitat for plants and animals.

HEALTH AND SAFETY:

- Air pollution exacerbates health problems related to the respiratory system (such as asthma).

- In the United States alone, more than 40,000 people per year are killed each year in car crashes.

- People who travel by car usually don't get as much exercise as people who travel by bicycle or on foot. Lack of exercise and obesity are major health problems in modern societies around the world.

COSTS: When cities sprawl, they need more *infrastructure* such as roads, utility lines (electricity, gas, telephone, and water), transit services, and sewers—all of which are very costly to build.

OTHER PROBLEMS: Other problems related to sprawl include traffic jams (*congestion*) and difficulty getting around for people without cars (such as kids, the handicapped, those who can't afford a car, those who don't want a car, and the elderly).

HOW URBAN PLANNERS ARE ADDRESSING SPRAWL

Urban planners are working hard to keep cities from sprawling. One idea is to preserve farmlands and wilderness at the edges of cities by creating zones where building is prohibited.

Another idea is to increase *density*. Basically, this means to increase the number of people that can fit into the areas of the city that are already built so that there is no need to spread out.

One way to increase density is called *infill development*. If you look around a city there is a lot of unused space (such as empty lots or parking lots that are too big) where new houses could be constructed.

Density could also be increased by building UP, NOT OUT. We could fit more people *in the city* by building taller buildings.