

City by Design

This lesson was created as a supplement to the *City by Design* program at the National Building Museum. It is designed to be used in your classroom independently, or as an activity before or after a school program at the Museum. For more information about and to register for the National Building Museum's school programs, visit <http://www.nbm.org/schools-educators/school-visit/>.

The *City by Design* program introduces kindergarten through sixth grade students to city planning. It encourages young people to explore the complexity of cities and helps them understand the impact of people's everyday decisions on the places where they live, work, and play.

National Building Museum

Created by an act of Congress in 1980, the National Building Museum explores, celebrates, and illuminates achievements in architecture, design, engineering, construction, and planning. Since opening its doors in 1985, the Museum has become a vital forum for exchanging ideas and information about such topical issues as managing suburban growth, designing and building sustainable communities, and revitalizing urban centers. A private, nonprofit institution, the Museum creates and presents engaging exhibitions and education programs, including innovative curricula for school children.

Over the past two decades, the Museum has created and refined an extensive array of youth programming. Each year, approximately 50,000 young people and their families participate in hands-on learning experiences at the Museum: 2-hour-long school programs for grades K–9; major daylong festivals; drop-in family workshops; programs helping Cub and Girl Scouts earn activity badges; and three innovative outreach programs, lasting between 30 and 60 hours, for secondary school students. The Museum's youth programming has won the Washington, D.C., Mayor's Arts Award for Outstanding Contributions to Arts Education and garnered recognition from the National Endowment for the Arts.



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Red Line Metro, Judiciary Square

Using Land Wisely: Smart Growth



Land can be described by the level to which it is developed and the relationship of its uses. “Density” describes the proximity of buildings to one another, a building’s size in relationship to its lot size, and the height of buildings. Urban land is densely developed; suburban land is less densely developed; and rural land is largely undeveloped.

Since the end of World War II, economic and population growth in the United States has focused on the suburbs. The suburbs’ low density has caused the consumption of large expanses of land as rural land is converted to suburbs. Because development is so spread out, suburbs can be costly in terms of services and infrastructure. Also, the separation of land uses in the suburbs means that residents must depend on the automobile to get around. Traffic increases as more growth puts more cars on the roads. The problems of suburban development have come to be called sprawl.

Today, city planners, designers, and government officials are trying to come up with ways to limit the problems of sprawl. One result has been an approach called smart growth. The goals of smart growth include:

- focusing growth into areas of existing development and infrastructure;
- creating transportation choices;

- creating communities where it is pleasant and easy to walk;
- including different types of housing such as single family homes and apartment buildings;
- mixing different land uses together; and
- protecting rural land and open spaces.

Young people may become stakeholders in the process of smart growth by understanding that land can be developed in several different ways.

Materials

Photocopies of worksheets, (page 42–44)

Paper

Pencils and markers

Brainstorm

Using the information sheet *Urban, Suburban, and Rural* (page 41), discuss with your students the differences between these three ways of developing land. Then, compare and contrast the three images on the worksheets, *Using Land Wisely I, II, and III*. Discuss some of the differences in the development patterns. Ask your students which pattern saves more trees and farmland? Which one puts uses closer together? Does one look like a better place to walk? Which one has more roads? Which one might have public transportation? Why?

Action

Construct a simple timeline of your community. Divide your students into three groups and have them research the way the community’s land was developed and organized 100 years ago, 50 years ago, and today. How much land was rural, suburban, and urban? Were buildings placed close together or far apart? Were there large highways or small roads? Was public transportation available? How have these things changed over time? Have each group make a section of the timeline that illustrates the characteristics of their community during the period that they researched.

Discussion and Analysis

Compare and contrast the information the students discovered. What do they like or dislike about the way land has been used? What decisions could their community make to ensure that it will be an enjoyable place to live in the future?

Taking it Further

- Read the book, *The Little House*, by Virginia Lee Burton, to younger students. Talk to them about the pros and cons of urban versus suburban versus rural living. Have the students list ways in which the city could have developed in a more responsible way that would have been more sensitive to the “Little House.”

Urban, Suburban, and Rural



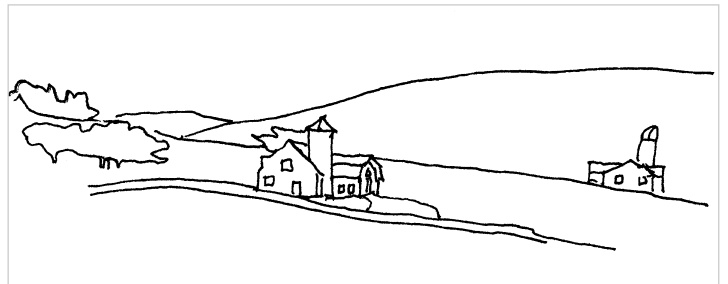
Urban land is densely developed, with tall buildings and people living and working close to each other. Uses on urban land, especially in older neighborhoods, are often mixed. For example, apartment buildings could be in the same block as single family houses, and grocery stores, parks, or coffee shops could be within walking distance of homes. Development on urban land is usually organized into blocks, with streets and blocks forming a grid.



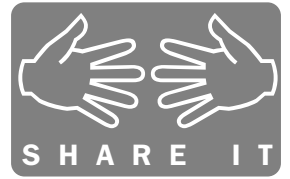
Suburban land is less densely developed. Buildings are more widely spaced and uses are strictly separated. Houses often have large lots. Commercial development in the suburbs can cover large portions of a site with low buildings and parking lots. Automobile traffic from the separate development areas feed onto highways.



Rural land is largely undeveloped; buildings and uses are highly separated. Agriculture is a dominant use of rural land.



Using Land Wisely I



Largely undeveloped, rural land

Pros

Habitat for wildlife is undisturbed.

There are many trees.

People can farm the land.

People can enjoy the landscape.

There is little traffic.

Air pollution from cars is low.

Houses are far apart and on large parcels of land.

Cons

There may be few jobs for people living in the area.

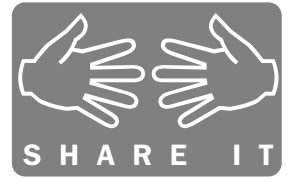
Shopping and services are not available nearby.

Infrastructure like water or sewers may not serve the houses.

People have to drive to get around.

Based on a drawing by Torti Gallas and Partners-CHK, Inc. and Dodson Associates for
The Neighborhood Model: Building Block for the Development Areas, County of Albemarle, Virginia

Using Land Wisely II



“Typical” suburban pattern of development

Pros

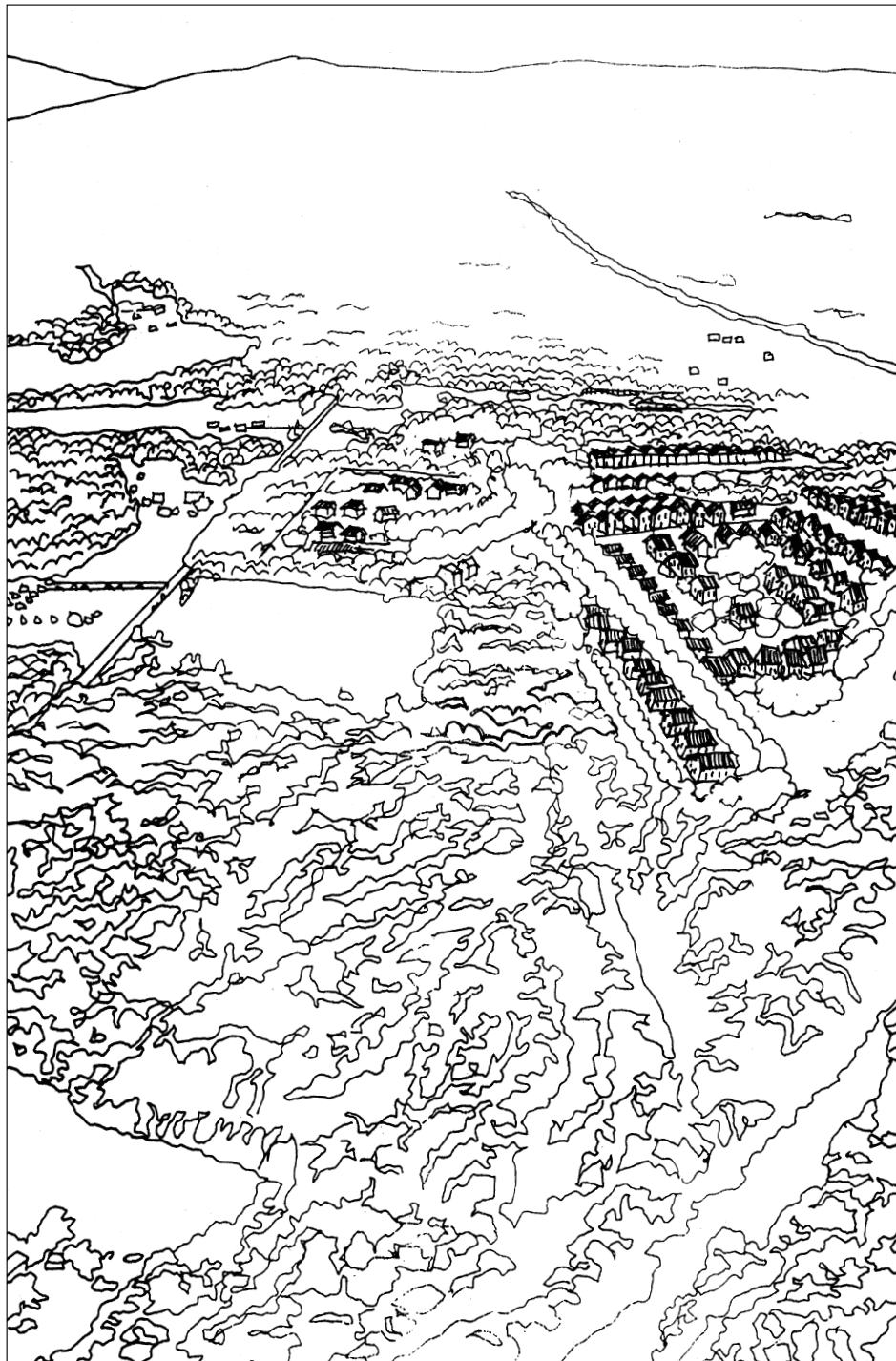
- People can own houses on large lots.
- Shopping and services are nearby.
- Infrastructure is available.
- Big discount stores may be nearby.
- Jobs may be plentiful and closeby.
- Property values increase.

Cons

- It is expensive to provide infrastructure when development is spread out.
- People have to drive to get around.
- Air pollution from cars is increased.
- Traffic jams are frequent.
- “Run-off” from rain hitting the pavement can cause flooding and pollute streams.
- Trees and habitat for wildlife are severely diminished or destroyed.

Based on a drawing by Torti Gallas and Partners-CHK, Inc. and Dodson Associates for
The Neighborhood Model: Building Block for the Development Areas, County of Albemarle, Virginia

Using Land Wisely III



Based on a drawing by Torti Gallas and Partners-CHK, Inc. and Dodson Associates for
The Neighborhood Model: Building Block for the Development Areas, County of Albemarle, Virginia

Concentrated development

Pros

Most of the site remains undeveloped, reducing rain run-off and habitat destruction.

Trees are valued and therefore more trees are saved.

There are fewer roads.

It's cheaper to provide infrastructure.

People can walk to shopping and services (e.g., restaurants, coffee shop, post office, book store).

Property value increases.

There is less traffic and air pollution from cars.

Public transportation becomes possible.

Some farming may still be possible.

Cons

House lots are smaller.

People live closer together.

Shopping choices may be limited.