

## EXTENDED ACTIVITIES

For those teachers who want to take a more in-depth look at land use, we offer eight extended activities as a follow up to the overview lesson for the video, *Saving Pennsylvania*. These activities can be used together to form a comprehensive unit on planning, or any one can be used as a stand-alone lesson.

These lessons are designed to get students thinking about the physical environment we've built for ourselves and how it might be improved.

**ACTIVITY ONE** encourages students to explore how daily life in America has changed in the last 50 years by interviewing old people and other adults about their lifestyles. This lesson culminates in a classroom discussion and debate about the merits of town and suburban living.

**Subjects:** Reading, Writing, Speaking and Listening  
Geography  
Science and Technology  
(Specific Pa. Dept of Education standards listed with activity)

**ACTIVITY TWO** asks students to evaluate dominant images in our car culture, as shown in advertising and television programs, and how they promote use of the car.

**Subjects:** Reading, Writing, Speaking and Listening  
Science and Technology  
Ecology and Environment  
Geography  
(Specific Pa. Dept of Education standards listed with activity)

**ACTIVITY THREE** acquaints students with the various ways we use land and how much space they take up. Students use a measuring tape or measuring wheel to measure our man-made environment, from cars to roads to houses and Wal-Marts. Students show the "footprints" of their measurements on a poster chart as related to a large space they all know: a football field.

**Subjects:** Mathematics  
Geography  
Civics and Government  
(Specific Pa. Dept of Education standards listed with activity)

**ACTIVITY FOUR** encourages students to explore the various ways humans have devised to move from place to place — walking, bicycling and motor vehicles — and list the advantages and disadvantages of each. Again, students show their work on a poster chart.

**Subjects:** Reading, Writing, Speaking and Listening  
Environment and Ecology  
Geography  
Science and Technology  
(Specific Pa. Dept of Education standards listed with activity)

**ACTIVITY FIVE** demonstrates the difference between public and private places. Public places include schools, town halls, parks, highways and streets. Many students will be surprised to learn roads and streets are the most common public spaces, and they need not be devoted just to cars.

**Subjects:** Civics and Government  
Environmental and Ecology  
Mathematics  
(Specific Pa. Dept of Education standards listed with activity)

**ACTIVITY SIX** motivates students to take a critical look at the places where they live, shop, go to school, and have fun. Students learn some basics about zoning laws. They take photographs of their community and score them as part of a “visual preference survey” of what’s most and least attractive about their community and discuss how better zoning laws might improve things.

**Subjects:** Civics and Government  
Arts and Humanities  
Environment and Ecology  
Reading, Writing, Speaking and Listening  
(Specific Pa. Dept of Education standards listed with activity)

**ACTIVITY SEVEN** uses US Geological Survey maps of your community to put everything together and analyze it. Is your community making the best use of its land?

**Subjects:** Mathematics  
Geography  
Environment and Ecology  
Reading Writing, Speaking and Listening  
Civics and Government  
(Specific Pa. Dept of Education standards listed with activity)

**ACTIVITY EIGHT** is the culminating activity. It challenges students to design an ideal community and then draw a plan for that community to scale using a map. Templates are provided for the “footprint” of houses, stores, and parking lots to use in the exercise.

**Subjects:** Mathematics  
Geography  
Environment and Ecology  
Reading Writing, Speaking and Listening  
(Specific Pa. Dept of Education standards listed with activity)

## **GLOSSARY**

## **RESOURCES and BIBLIOGRAPHY**

## ACTIVITY ONE — COMPARING AND CONTRASTING TOWNS AND SUBURBS

### OVERVIEW OF CONCEPT

Students interview people who grew up in traditional towns and people living in the suburbs to learn the advantages and disadvantages of each way of life. People have different ideas of progress, and concepts of the “ideal society” change over time. Newer is not always better. In many ways, the traditional towns of 50 years ago had advantages over the low density lifestyle many people live today.

### OBJECTIVES

Students will be able to intelligently debate the merits of traditional towns versus the car-dominated suburban lifestyle.

### SUBJECTS

Reading, Writing, Speaking and Listening  
Geography  
Science and Technology  
(For specific standards, see box below)

### TIME

Two classroom periods plus two hours' work outside the classroom.

### MATERIALS

Notebooks

### BACKGROUND

There have been many positive changes in American life during the last century. Labor saving devices like washing machines make it easier to do household chores. Refrigerators and microwaves make it easier to have hot and cold meals. Televisions and stereos provide a huge array of entertainment at any time. Air conditioners keep us cool in the summer.

Houses are bigger and cars give most adults unlimited mobility. Vastly improved health care means people are living longer, healthier lives.

But is our quality of life better in every way, or did we lose something valuable along the way?

### PROCEDURE

1. Ask students to interview people who grew up in traditional towns or perhaps lived there as a child.
2. Ask students to interview people who live in the suburbs where it is necessary to drive for most activities.

3. Have students to write the key points of their interviews and report on the results to the class.
4. Ask students to offer their own opinions as to the advantages and disadvantages of town life and suburban life.

Sample questions students might ask of people who grew up in traditional towns:

*Growing up, did you enjoy walking to school?*

*Growing up, were there other places you could go on your own?*

*Growing up, did you feel safe walking by yourself?*

*As an adult, did you walk for any of your errands?*

*How were towns different from today? Were they nicer places to live?*

*Did the pace of life seem different from today? How?*

*Was there a tendency for people of different ages and incomes to live in the same neighborhoods?*

*What was better about life then? What was worse?*

Sample questions students might ask of people living in suburbs or rural areas:

*What do you like best about living in the suburbs?*

*What do you like least?*

*Do you think it would be a good idea to have sidewalks and stores and other places you could walk to?*

*Would you be willing to live on a smaller house lot if it meant you could walk places?*

*Would you enjoy a shared community recreation space?*

STATE STANDARDS ACTIVITY 1	
Reading, Writing, Speaking and Listening 1.8.8 Research A. Select and refine a topic for research.  B. Locate information using appropriate sources and strategies. — Determine valid resources for researching the topic, including primary and secondary sources. — Evaluate the importance and quality of the sources. — Select essential sources (e.g., dictionaries, encyclopedias, other reference materials, interviews, observations, computer databases).  C. Organize, summarize and present the main ideas from research. — Identify the steps necessary to carry out a research project. — Take relevant notes from sources. — Develop a thesis statement based on research. — Take notes relevant to the research topic.	Reading, Writing, Speaking and Listening 1.8.11 Research A. Select and refine a topic for research.  B. Locate information using appropriate sources and strategies. — Determine valid resources for researching the topic, including primary and secondary sources. — Evaluate the importance and quality of the sources. — Select sources appropriate to the breadth and depth of the research (e.g., dictionaries, thesauruses, other reference materials, interviews, observations, computer databases).  C. Organize, summarize and present the main ideas from research.

- Develop a thesis statement based on research.

Reading, Writing, Speaking and Listening

1.4.8 Types of Writing

- B. Write multi-paragraph informational pieces (e.g., letters, descriptions, reports, instructions, essays, articles, interviews).
- Include cause and effect.
  - Develop a problem and solution when appropriate to the topic.
  - Use primary and secondary sources.

C. Write persuasive pieces.

- Include a clearly stated position or opinion.
- Include convincing, elaborated and properly cited evidence.
- Develop reader interest.
- Anticipate and counter reader concerns and arguments.

Reading, Writing, Speaking and Listening

1.4.11 Types of Writing

- B. Write complex informational pieces (e.g., research papers, analyses, evaluations, essays).
- Include a variety of methods to develop the main idea.
  - Use precise language and specific detail.
  - Include cause and effect.
  - Use primary and secondary sources.

C.. Write persuasive pieces.

- Include a clearly stated position or opinion.
- Include convincing, elaborated and properly cited evidence.
- Develop reader interest.
- Anticipate and counter reader concerns and arguments.
- Include a variety of methods to advance the argument or position.

Reading, Writing, Speaking and Listening

1.6.8 Speaking and Listening

A. Listen to others.

- Ask probing questions.
- Analyze information, ideas and opinions to determine relevancy.
- Take notes when needed.

D. Contribute to discussions.

- Ask relevant, probing questions.
- Respond with relevant information, ideas or reasons in support of opinions expressed
- Listen to and acknowledge the contributions of others.
- Adjust tone and involvement to encourage equitable participation.
- Clarify, illustrate or expand on a response when asked.
- Present support for opinions.
- Paraphrase and summarize, when prompted.

E. Participate in small and large group discussions and presentations.

- Conduct interviews as part of the research process.
- Organize and participate in informal debates.

Reading, Writing, Speaking and Listening

1.6.11 Speaking and Listening

A. Listen to others.

- Ask clarifying questions.

- Synthesize information, ideas and opinions to determine relevancy.

- Take notes.

D. Contribute to discussions.

- Ask relevant, clarifying questions.
- Respond with relevant information or opinions to questions asked.
- Listen to and acknowledge the contributions of others.
- Adjust tone and involvement to encourage equitable participation.
- Facilitate total group participation.
- Introduce relevant, facilitating information, ideas and opinions to enrich the discussion.
- Paraphrase and summarize as needed.

E. Participate in small and large group discussions and presentations.

- Initiate everyday conversation.
- Select and present an oral reading on an assigned topic.
- Conduct interviews.
- Organize and participate in informal debate around a specific topic.

Science and Technology

3.8.10 Science, Technology and Human Endeavors

- A. Analyze the relationship between societal demands and scientific and technological enterprises. Identify past and current tradeoffs between increased production, environmental harm and social values (e.g., increased energy needs, power plants, automobiles).
- Describe and evaluate social change as a result of technological developments.
  - Analyze a recently invented item, describing the human need that prompted its invention and the current and potential social impacts of the specific invention.

C. Evaluate possible consequences and impacts of scientific and technological solutions.

- Relate scientific and technological advancements in terms of cause and effect.
- Describe and evaluate the impacts that financial considerations have had on specific scientific and technological applications.
- Analyze the impacts on society of accepting or rejecting scientific and technological advances.

Science and Technology

3.8.12 Science, Technology and Human Endeavors

- A. Synthesize and evaluate the interactions and constraints of science and technology on society.
- Evaluate technological developments that have changed the way humans do work and discuss their impacts (e.g., genetically engineered crops).

C. Evaluate the consequences and impacts of scientific and technological solutions.

- Analyze and communicate the positive or negative impacts that a recent technological invention had on society.
- Evaluate and describe potential impacts from emerging technologies and the consequences of not keeping abreast of technological advancements (e.g., assessment alternatives, risks, benefits, costs, economic impacts, constraints).

## ACTIVITY TWO — IMAGES IN OUR CAR CULTURE

### OVERVIEW

Students clip magazine advertisements and tape record television commercials for cars, show them in class, and discuss the ways they influence people’s conception of “the good life.”

### KEY CONCEPT

Strictly speaking, a car is merely a machine for moving people and things from one place to another. But advertising has transformed cars into devices for people to express their deepest feelings about themselves and others.

### OBJECTIVES

Students will be able to look critically at advertisements and separate fact from emotion.

### SUBJECTS

Reading, Writing, Speaking and Listening  
Science and Technology  
Ecology and Environment  
Geography  
(For specific standards, see box below)

### TIME

Two classroom periods plus two hours’ work outside the classroom.

### MATERIALS

Notebooks

### BACKGROUND

Americans treasure personal freedom and individuality. They are also strongly influenced by advertising, which is a \$100 billion a year industry in the United States. The New York Times has reported that automakers spend lavishly to examine their customers’ psychological urges and design cars to appeal to those urges. Advertisements for sport-utility vehicles, for example, are designed to appeal to people’s aggressive instincts and their desire for power and control.

### PROCEDURE

1. Ask students to clip out advertisements for cars from magazines and tape record television advertisements and bring them to class.
2. Have students review the ads and discuss what they convey:
  - Do the ads show cars in places where you normally see them?*
  - Where do ads usually show cars?*
  - Do the ads ever show traffic jams?*
  - Do they ever show parking lots?*

*What messages do these ads convey about*

*Speed?*

*Power?*

*Freedom?*

*What do ads for light trucks and sport utility vehicles say about people's role in nature and the wilderness?*

STATE STANDARDS FOR ACTIVITY TWO

Reading, Writing, Speaking and Listening

1.2.8 Reading Critically in All Content Areas

A. Read and understand essential content of informational texts and documents in all academic areas.

- Differentiate fact from opinion utilizing resources that go beyond traditional text (e.g., newspapers magazines and periodicals) to electronic media.
- Distinguish between essential and nonessential information across texts and going beyond texts to a variety of media; identify bias and propaganda where present.
- Draw inferences based on a variety of information sources.
- Evaluate text organization and content to determine the author's purpose and effectiveness according to the author's theses, accuracy and thoroughness.

B. Use and understand a variety of media and evaluate the quality of material produced.

- Compare and analyze how different media offer a unique perspective on the information presented.
- Analyze the techniques of particular media messages and their effect on a targeted audience.

Reading, Writing, Speaking and Listening

1.2.11 Reading Critically in All Content Areas

A. Read and understand essential content of informational texts and documents in all academic areas.

- Distinguish between essential and nonessential information across a variety of sources, identifying the use of proper references or authorities and propaganda techniques where present.
- Use teacher and student established criteria for making decisions and drawing conclusions.
- Evaluate text organization and content to determine the author's purpose and effectiveness according to the author's theses, accuracy, thoroughness, logic and reasoning.

B. Use and understand a variety of media and evaluate the quality of material produced.

- Select appropriate electronic media for research and evaluate the quality of the information received.

Reading, Writing, Speaking and Listening

1.6.8 Speaking and Listening

A. Listen to others.

- Ask probing questions.
- Analyze information, ideas and opinions to determine relevancy.
- Take notes when needed.

D. Contribute to discussions.

- Ask relevant, probing questions.
- Respond with relevant information, ideas or reasons in support of opinions expressed
- Listen to and acknowledge the contributions of others.
- Adjust tone and involvement to encourage equitable participation.
- Clarify, illustrate or expand on a response when asked.
- Present support for opinions.
- Paraphrase and summarize, when prompted.

E. Participate in small and large group discussions and presentations.

- Conduct interviews as part of the research process.
- Organize and participate in informal debates.

Reading, Writing, Speaking and Listening

1.6.11 Speaking and Listening

A. Listen to others.

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- Paraphrase and summarize as needed.

E. Participate in small and large group discussions and presentations.

- Initiate everyday conversation.
- Select and present an oral reading on an assigned topic.
- Conduct interviews.
- Organize and participate in informal debate around a specific topic.

Science and Technology

3.8.10 Science, Technology and Human Endeavors

A. Analyze the relationship between societal demands and scientific and technological enterprises.

- Identify past and current tradeoffs between increased production, environmental harm and social values (e.g., increased energy needs, power plants, automobiles).
- Compare technologies that are applied and accepted

differently in various cultures (e.g., factory farming, nuclear power).

- Describe and evaluate social change as a result of technological developments.
- Assess the social impacts of a specific international environmental problem by designing a solution that applies the appropriate technologies and resources.
- Analyze a recently invented item, describing the human need that prompted its invention and the current and potential social impacts of the specific invention.

C. Evaluate possibilities consequences and impacts of scientific and technological solutions.

- Relate scientific and technological advancements in terms of cause and effect.
- Describe and evaluate the impacts that financial considerations have had on specific scientific and technological applications.
- Compare and contrast potential solutions to technological, social, economic and environmental problems.
- Analyze the impacts on society of accepting or rejecting scientific and technological advances.

Science and Technology

3.8.12 Science, Technology and Human Endeavors

A. Synthesize and evaluate the interactions and constraints of science and technology on society.

- Evaluate technological developments that have changed the way humans do work and discuss their impacts (e.g., genetically engineered crops).

C. Evaluate the consequences and impacts of scientific and technological solutions.

- Propose solutions to specific scientific and technological applications, identifying possible financial considerations.
- Analyze scientific and technological solutions through the use of risk/benefit analysis.

- Analyze and communicate the positive or negative impacts that a recent technological invention had on society.

Environment and Ecology

4.8.7 Humans and the Environment

- C. Explain how human activities may affect local, regional and national environments.
- Explain how a particular human activity has changed the local area over the years.

Geography

9.3.9. The Human Characteristics and Place and Regions

B. Explain the human characteristics of places and regions by their cultural characteristics.

C. Explain the human characteristics of places and regions by their settlement characteristics.

- Current and past settlement patterns in Pennsylvania and the United States
- Forces that have re- shaped modern settlement patterns (e. g., central city decline, suburbanization, the development of transport systems)

Geography

9.3.12 The Human Characteristics and Place and Regions

B. Analyze the significance of human activity in shaping places and regions by their cultural characteristics.

C. Analyze the significance of human activity in shaping places and regions by their settlement characteristics.

- Forces that have reshaped settlement patterns (e. g., commuter railroads, urban freeways, the development of megalopoli and edge cities)



## ACTIVITY THREE — MEASURING OUR COMMUNITY

### OVERVIEW

By now students are familiar with the idea that there are two basic ways of arranging houses, stores, schools and office buildings.

1. Spread them far apart, requiring the use of the car
2. Place them close together so people can walk.

In order for students to grasp land use issues, it is important to visualize the size of the average American house, store, car, and parking space. Students can measure these things themselves.

### KEY CONCEPT

In order to plan and evaluate communities, builders and engineers need a method to show our physical communities on paper. They do this with plot plans and maps. By measuring the various physical elements of our world — cars, roads, buildings — and showing these measurements on paper, planners are able to show how their communities are laid out and propose changes in the future.

### OBJECTIVES

Students will learn to measure their physical world and show those measurements on a plot plan. They will be able to visualize the basic unit of land measure, an acre.

### SUBJECTS

Mathematics

Geography

Civics and Government

*(For specific standards, see box below)*

### TIME

Two classroom periods plus several hours research outside the classroom.

### MATERIALS

Measuring wheel ( available from athletic department) or 100' measuring tape.

Engineer's scale (a standard size ruler, obtainable at any stationery store) that measures feet in relation to inches, including

1" = 10'

1" = 20'

1" = 50'

1" = 100'

Yardstick.

Triangle (used for drawing perpendicular lines, also available at stationery stores).

foamboard measuring 20" x 30".

Posterboard or thin cardboard to be used to cut out "footprints."

Sticky-backed Velcro.

## **BACKGROUND**

There are a few basic facts that are the backbone of the planning profession. Among them are:

1 mile = 5,280 feet

1 acre = 43,560 square feet

A football field is an excellent model for students to visualize the size of an acre, because it is slightly larger than an acre and has measurements on it.

## **PROCEDURE**

1. Ask students to use a measuring tape or measuring wheel and measure various objects in their community.
2. Have record their measurements on a chart (see sample following page)
3. Using an engineer's scale, triangle and yardstick, have students draw the outline of a football field on foamboard at a scale of 1" = 20'. Be sure the football field is in the middle of the foamboard, so there is space around it.
4. Using an engineer's scale, have students figure out how much of a football field would be covered by an acre.
5. Have them measure out an acre on posterboard or thin cardboard (1" = 20') that would fit within the dimensions of a football field.
6. Attach the acre to the football field with sticky-backed Velcro. Measure out a 1/2 acre and a 1/4 quarter acre. Measure out other objects from their chart to 1" = 20' and attach them to the football field as well. (Note that the Wal-Mart or Kmart will be twice the size of the football field.)
7. Most zoning regulations require 1 parking space for every 250 square feet of an office building and 1 parking space for every 200 square feet of a store. Using the rule of thumb that it takes 350-400 square feet to park one car (including driveways and access lanes), have students show how much parking is needed for some of the buildings they've measured.

## **QUESTIONS**

*What takes up more space, buildings or yards?*

*What is the ideal lot size for a house? Is there an ideal lot size?*

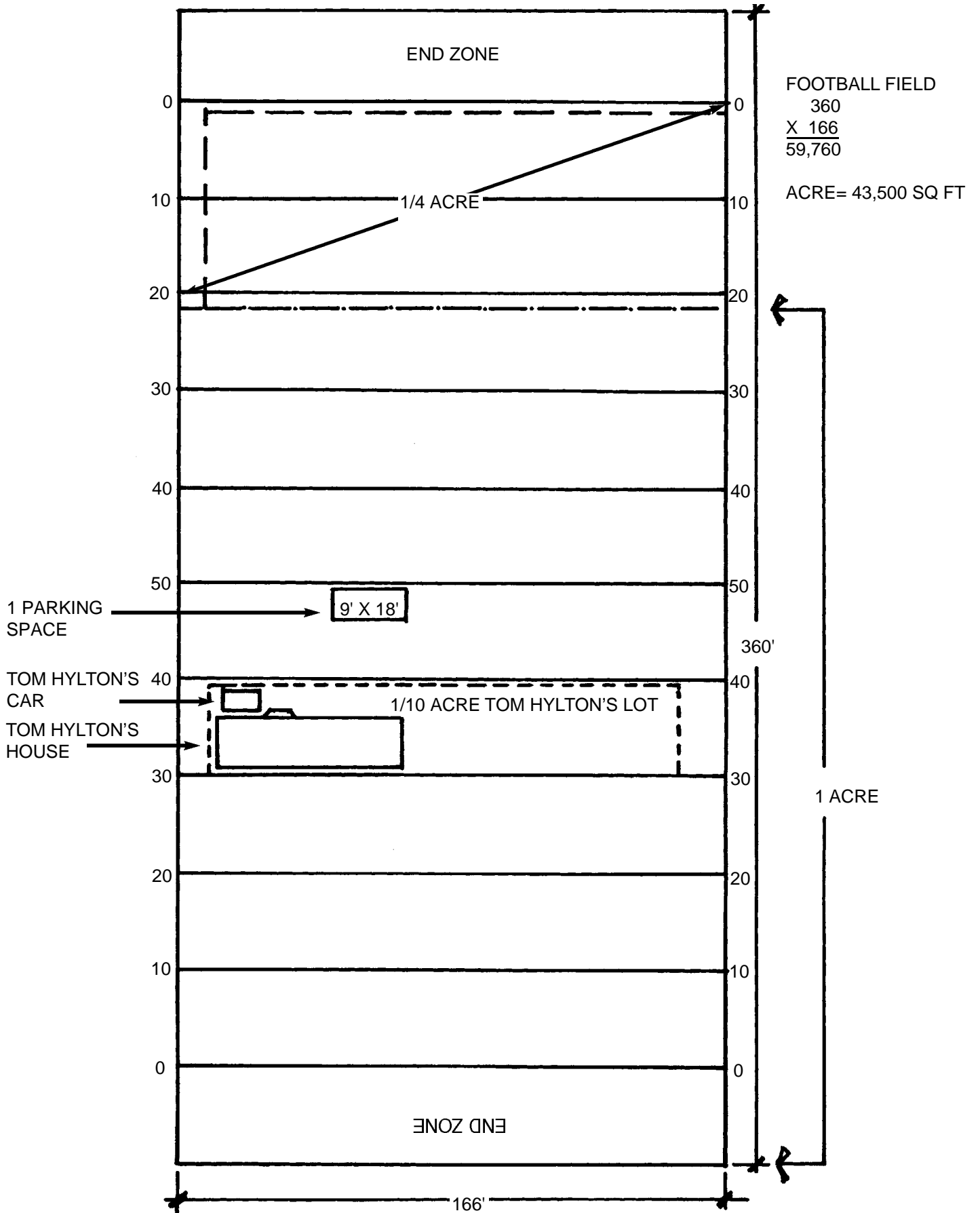
*Given current zoning regulations, what takes up more room, the buildings or parking lots?*

*How might it be possible to reduce the amount of parking needed around buildings?*

## Sample chart filled out by Tom Hylton using places in his hometown of Pottstown, Pennsylvania

COMMUNITY ELEMENT	SIZE	NOTES
Tom Hylton's house	18' x 60' = 1,080 sq. ft.	The house is 2 1/2 stories and basement for a total interior size of 3,200 sq ft., larger than the average American house.
Tom Hylton's lot	30' x 150' = 4,500 sq. ft.	This is about a 10th of an acre, plenty of room for one off-street parking space and a good sized backyard with a fence around it for privacy.
Biggest office building in downtown Pottstown	142' x 62' = 8,804 sq. ft.	This building is five stories tall plus a basement, so it contains 52,824 sq. feet, but doesn't take up a lot of room.
Pottstown Wal-Mart	320' x 380' = 121,600 sq. ft.	2. 8 acres, or about the size of two football fields. Wal-Marts are 1 story. They would take up a lot less space, and be more energy efficient, if they were two or three stories.
Main Street Gift Shop	23.6' x 100' = 2,360 sq. ft.	This is a narrow shop that you usually find in traditional downtowns. The building is three floors, total 7,080 sq. ft.
Tom's car (Dodge Stratus)	6' x 15'8" = 95 sq. ft.	The car takes up 20 times as much space as the driver
Ford Explorer	6'8" x 17' = 110 sq. ft.	Part of the trend toward bigger and bigger cars
School bus (40 seats)	8' x 37'	Wouldn't be necessary if kids could walk to school.
Pottstown 7-Eleven	49' x 62' = 3,038 sq. ft.	In front of the building is a parking lot measuring 81' x 87' = 7,047 sq. ft. The parking lot is more than twice as big as the building
Tractor-trailer	8' x 67' = 536 sq. ft.	If we had it to do over again, would we mix cars and these behemoths on the same highways?
Alley	8' wide	Wide enough for garbage trucks and fire trucks
Narrow residential street in downtown Pottstown	30' wide	This is a one-way street with one lane of traffic and parking on either side of the street. There is plenty of parking on the street so the houses do not need off-street parking
Suburban residential street in newer area of Pottstown	40' wide	Because it only take 10' feet for one lane of cars, and because all the houses on this street have off-street parking, this street is a lot wider than it needs to be.
Main street in traditional downtown	68' wide	With so much space, it should be possible to have a parking on either side, bikes lanes, and room for trees also.
Rural highway	21' wide	Each lane is 10.5'. A common road size prior to the 1950s.
Limited access 4-lane highway Route 422 outside Pottstown	87' wide including all paved surface	7' shoulder, 12' driving lane, 12' driving lane, 9' shoulder, guard rail in center of highway, 10' shoulder, 12' lane, 12' lane, 13' shoulder. An enormous amount of room.
Pottstown McDonald's Restaurant	100'x50' = 5,000 square feet, including play room	The lot including the building is 149'x245' = 36,505 sq. ft. The parking lot (and drive through window) is more than six times larger than the building.
Parking space	9' x 18' = 162 sq. ft.	Factor in access lanes for the parking spaces, and it usually takes 350 to 400 sq. ft. for each car in a parking lot. Offices usually have 250 sq. ft. for each employee, so we use more space for cars than for people.

EXAMPLE. DRAW FOOTBALL FIELD IN MIDDLE OF 30' X 40' OR 20' X 30' FOAM BOARD  
 DRAW 1" = 20' SCALE



THIS FOOTBALL FIELD DRAWN 1"=40' SCALE

STATE STANDARDS FOR ACTIVITY THREE

Mathematics

2.3.8 Measurement and Estimation

A. Develop formulas and procedures for determining measurements (e.g., area, volume, distance).

D. Estimate, use and describe measures of distance, rate, perimeter, area, volume, weight, mass and angles.

F. Use scale measurements to interpret maps or drawings.

G. Create and use scale models.

Mathematics

2.3.11 Measurement and Estimation

A. Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations.

C. Demonstrate the ability to produce measures with specified levels of precision.

Geography

9.1.9 Basic Geographic Literacy

A. Explain geographic tools and their uses.

- Construction of maps
- Projections
- Scale
- Symbol systems
- Level of generalization
- Types and sources of data
- Mental maps to organize and understand the human and physical features of the United States

Geography

9.3.9. The Human Characteristics and Place and Regions

A. Explain the human characteristics of places and regions by their population characteristics.

- Effects of different types and patterns of human movement

- Mobility (e. g., travel for business)

C. Explain the human characteristics of places and regions by their settlement characteristics.

- Current and past settlement patterns in Pennsylvania and the United States

Civics and Government

5.3.9 How Government Works

A. Explain the structure, organization and operation of the local, state and national governments including domestic and national policy-making.

D. Explain how independent government agencies create, regulate and enforce regulatory policies.

- Local (e. g., Zoning Board)

## ACTIVITY FOUR — PERSONAL TRANSPORTATION

### OVERVIEW

Land use consists of buildings and transportation corridors connecting them. A transportation corridor can be as simple as a path worn through a meadow. It can be a sidewalk, a street, a bike path, or a railroad track.

There are only a few methods of ground transportation, and each has its advantages and disadvantages. Students will explore three basic transportation options.

### KEY CONCEPTS

Walking and riding bicycles have strong advantages over driving cars, but these methods of transportation are only feasible if houses, stores, schools, and other buildings are placed within close proximity.

### OBJECTIVES

Students will understand the advantages and disadvantages of three methods of getting around: Walking, riding bicycles, and driving cars.

### SUBJECTS

Reading, Writing, Speaking and Listening  
Environment and Ecology  
Geography  
Science and Technology  
(For specific standards, see box below)

### TIME

Two classroom periods plus several hours of homework.

### MATERIALS

Notebooks  
Research materials  
(Optional) computers for internet research and making charts

### BACKGROUND

In the last 50 years, the private automobile has become the dominant transportation method in America. A hundred years ago, the car barely existed and people walked, bicycled, rode horses, or took trains or trolleys to get from one place to another.

In the last 50 years, a vast network of highways, roads and streets has been built at a cost of billions of dollars. The ability of the private car to go anywhere, anytime, has made it the dominant method of transportation in America. Today, nearly 85 percent of all trips in America are taken by private automobile.

**But the automobile has downsides:**

- 3 It requires an enormous amount of space for roads and parking lots
- 3 It pollutes the air and groundwater
- 3 It is very dangerous. More than 30 million people have died in car crashes world wide in the last 100 years.

**Space consumed by automobile driving:**

- 3 While a standing human being takes up about 2-4 square feet of space, a car typically takes up 70 to 110 square feet of space.
- 3 The typical car parking space is 9 feet by 18 feet, 162 square feet. However, when access lanes are included, it generally takes 350 to 400 square feet to park each car.
- 3 Experts estimate there are 6 to 7 parking spaces for each car in America.
- 3 Experts estimate that each employee needs about 250 square feet of space in an office. But it takes 350 to 400 square feet to park the employee's car.
- 3 A moving car requires one car length for every 10 miles of speed to separate it from other cars on the highway. Therefore, a car moving at 60 miles per hour on a 12' wide lane of highway needs about 1,300 square feet of space, the footprint of an average house.

**Pollution:**

- 3 Motor vehicles are the leading cause of air pollution in the United States. They release fine soot, carbon dioxide, carbon monoxide, CFCs, methane, and nitrogen oxides. These gases are the major cause of global warming.
- 3 Oil and gas spills at gas stations, leaky underground gas tanks, and runoff of oil and grease from roads and parking lots are a major source of groundwater pollution and river and stream pollution.

**Dangers of automobile driving:**

- 3 Although the number of annual fatalities has decreased since they peaked in the 1970s, about 40,000 Americans are killed every year in car crashes. This includes about 5,000 pedestrians and several hundred bicyclists each year.
- 3 Car crashes are the leading cause of death for young people aged 5 to 29. The fatality rate for teen-age drivers is four times higher than middle-aged drivers.
- 3 Drinking and driving is involved in about 40 percent of all fatal car crashes.
- 3 Cell phones are a growing cause of car crashes. According to a study in the New England Journal of Medicine, drivers using cell phones are four times more likely to be involved in accidents. This makes cell phone users about as dangerous as drunk drivers.
- 3 In low to moderate-speed crashes (up to about 25 miles per hour), seat belts and air bags are effective. Their effectiveness decreases at higher speeds.
- 3 Half of all fatal car crashes are so violent, even seat belts and air bags cannot save the victims.

## **PROCEDURE**

1. Ask students to examine to examine the three basic methods of personal transportation:
  - Walking
  - Riding a bicycle
  - Driving cars
2. Among the factors to be considered are:
  - Cost of each (capital and operating cost)
  - Speed of each.
  - Amount of space each consumes.
  - Environmental impact.
  - Advantages and disadvantages.
3. Have students make up a chart either on poster board or standard size paper comparing the various factors. Students can do research on the internet using the resources listed on pages 75 and 76. Note that the Sierra Club website, [www.sierraclub.org/sprawl/resources](http://www.sierraclub.org/sprawl/resources), has numerous links to websites on transportation, walking, bicycling, and traffic.
4. Ask students to write a paper or conduct a classroom discussion about the transportation choices Pennsylvanians are making today. Give the students copies of different transportation choices used in Europe and ask them if we depend too heavily on one mode transportation.

SEE SAMPLE CHART ON FOLLOWING PAGES



Method of Transportation	Capital cost	Operating cost	Cruising speed	Space consumed per person	Limitations
Walking	None	None	2 to 4 miles per hour	2 square feet at rest= 4 square feet moving	Limitations in distance. For routine daily errands, destinations should be within one mile (12-15 minute walk).
Bicycle	\$200-\$500	\$25 per year	10-25 miles per hour	12 square feet at rest 24 square feet moving	Limitations in distance. For commuting, destinations should be within five miles (1/2 hour bike ride)
Automobile	\$10,000 to \$70,000	\$5,000 per year	20-70 miles per hour	The per person average depends on how many people are in a car.  To park one car: approximately 350-400 square feet per car  To drive. Size of car, plus one size of car for each 10 miles of speed.	Requires a right of way of at least 7 feet.

Environmental impact	Advantages	Disadvantages
None	<p>Non-polluting</p> <p>Quiet</p> <p>An excellent form of exercise for people aged 2 to 100.</p> <p>Medical research shows that people can extend their lifespan significantly by exercising several times per week.</p> <p>Enables people to experience their environment in a pleasant and intimate way.</p> <p>No storage space is necessary for vehicle at the end of the trip, so no part of the environment needs to be set aside for parking lots.</p>	<p>Can be uncomfortable in inclement weather.</p> <p>Limitations on the amount of items that can be carried.</p>
Impervious surface needed, minimum 4 feet wide	<p>Non-polluting</p> <p>Bicycling is an excellent form of exercise for people aged 8 to 80.</p> <p>Medical research shows that people can extend their lifespan significantly by exercising several times per week.</p> <p>Bicycles are the most energy-efficient form of transportation existing today.</p> <p>Bicycles take up modest amount of room in motion and in storage. About 20 bikes can be stored in the same space as one car.</p>	<p>Can be uncomfortable in inclement weather.</p> <p>Some people find bicycling difficult on hilly terrains.</p> <p>Limitations on the amount of items that can be carried, although saddle bags and baskets can be used.</p>
<p>Cars are a major source of air pollution. They spew:  20 % of the fine soot  33% of the hydrocarbons  41% of nitrogen oxides  66% of the carbon monoxide in the nation's air</p> <p>They generate 25% of the nation's emissions of carbon dioxide, the leading greenhouse gas.</p> <p>Because they require extensive space to drive and store, huge amounts of impervious surface must be created for their use.</p> <p>The large amounts of impervious surface use up huge quantities of open space.</p> <p>The large amount of impervious surface prevents rainwater from recharging the earth, increasing droughts and storms. It increases runoff which pollutes our rivers and streams.</p> <p>Reorienting buildings to accommodate the car have degraded the appearance of the American landscape.</p>	<p>Comfortable, climate-controlled</p> <p>Relatively unaffected by the weather</p> <p>Provides room for storing items</p> <p>Can transport up to four people comfortably.</p>	<p>Contributes to air pollution</p> <p>Contributes to groundwater pollution</p> <p>Noisy</p> <p>Prevent occupants from experiencing the environment around them</p> <p>Because they require extensive space to drive and store, huge amounts of impervious surface must be created for their use.</p> <p>This impervious surface uses up vast amounts of land, is unattractive, makes it more difficult to walk or ride bicycles by requiring things to be spaced apart.</p> <p>Expensive to drive and store</p> <p>Expensive to own and operate.</p> <p>Danger of death and serious injury.</p> <p>About 40,000 Americans are killed in car accidents annually.</p> <p>About 2 million Americans are injured in car accidents annually.</p>

STATE STANDARDS ACTIVITY 4

Reading, Writing, Speaking and Listening

1.2.8 Reading Critically in All Content Areas

- A. Read and understand essential content of informational texts and documents in all academic areas.
- Differentiate fact from opinion utilizing resources that go beyond traditional text (e.g., newspapers magazines and periodicals) to electronic media.
  - Distinguish between essential and nonessential information across texts and going beyond texts to a variety of media; identify bias and propaganda where present.
  - Draw inferences based on a variety of information sources.
  - Evaluate text organization and content to determine the author's purpose and effectiveness according to the author's theses, accuracy and thoroughness.

- B. Use and understand a variety of media and evaluate the quality of material produced.

- Compare and analyze how different media offer a unique perspective on the information presented.
- Analyze the techniques of particular media messages and their effect on a targeted audience.

Reading, Writing, Speaking and Listening

1.2.11 Reading Critically in All Content Areas

- A. Read and understand essential content of informational texts and documents in all academic areas.
- Differentiate fact from opinion across a variety of texts by using complete and accurate information, coherent arguments and points of view.
  - Distinguish between essential and nonessential information across a variety of sources, identifying the use of proper references or authorities and propaganda techniques where present.
  - Use teacher and student established criteria for making decisions and drawing conclusions.
  - Evaluate text organization and content to determine the author's purpose and effectiveness according to the author's theses, accuracy, thoroughness, logic and reasoning.

- B. Use and understand a variety of media and evaluate the quality of material produced.

- Select appropriate electronic media for research and evaluate the quality of the information received.

Reading, Writing, Speaking and Listening

1.4.8 Types of Writing

- B. Write multi-paragraph informational pieces (e.g., letters, descriptions, reports, instructions, essays, articles, interviews).
- Include cause and effect.
  - Develop a problem and solution when appropriate to the topic.
  - Use relevant graphics (e.g., maps, charts, graphs, tables, illustrations, photographs).
  - Use primary and secondary sources.

- C. Write persuasive pieces.

- Include a clearly stated position or opinion.
- Include convincing, elaborated and properly cited evidence.

Reading, Writing, Speaking and Listening

1.4.11 Types of Writing

- B. Write complex informational pieces (e.g., research papers, analyses, evaluations, essays).
- Include a variety of methods to develop the main idea.
  - Use precise language and specific detail.
  - Include cause and effect.
  - Use relevant graphics (e.g., maps, charts, graphs, tables, illustrations, photographs).
  - Use primary and secondary sources.

- C.. Write persuasive pieces.

- Include a clearly stated position or opinion.
- Include convincing, elaborated and properly cited evidence.

Reading, Writing, Speaking and Listening

1.5.8 Quality of Writing

- A. Write with a sharp, distinct focus.

- Identify topic, task and audience.
- Establish a single point of view.

- B. Write using well-developed content appropriate for the topic.

- Gather, determine validity and reliability of and organize information.
- Employ the most effective format for purpose and audience.
- Write paragraphs that have details and information specific to the topic and relevant to the focus.

Reading, Writing, Speaking and Listening

1.5.11 Quality of Writing

- A. Write with a sharp, distinct focus.

- Identify topic, task and audience.
- Establish and maintain a single point of view.

- B. Write using well-developed content appropriate for the topic.

- Gather, determine validity and reliability of, analyze and organize information.
- Employ the most effective format for purpose and audience.
- Write fully developed paragraphs that have details and information specific to the topic and relevant to the focus.

Reading, Writing, Speaking and Listening

1.6.8 Speaking and Listening

- A. Listen to others.

- Ask probing questions.
- Analyze information, ideas and opinions to determine relevancy.
- Take notes when needed.

- D. Contribute to discussions.

- Ask relevant, probing questions.
- Respond with relevant information, ideas or reasons in support of opinions expressed. Listen to and acknowledge the contributions of others.
- Adjust tone and involvement to encourage equitable participation.
- Clarify, illustrate or expand on a response when asked.
- Present support for opinions.
- Paraphrase and summarize, when prompted.

E. Participate in small and large group discussions and presentations.

- Initiate everyday conversation.
- Select a topic and present an oral reading.
- Conduct interviews as part of the research process.
- Organize and participate in informal debates.

F. Use media for learning purposes.

- Use various forms of media to elicit information, to make a student presentation and to complete class assignments and projects.
- Evaluate the role of media in focusing attention and forming opinions.

Reading, Writing, Speaking and Listening

1.6.11 Speaking and Listening

A. Listen to others.

- Ask clarifying questions.
- Synthesize information, ideas and opinions to determine relevancy.
- Take notes.

D. Contribute to discussions.

- Ask relevant, clarifying questions.
- Respond with relevant information or opinions to questions asked.
- Listen to and acknowledge the contributions of others.
- Adjust tone and involvement to encourage equitable participation.
- Facilitate total group participation.
- Introduce relevant, facilitating information, ideas and opinions to enrich the discussion.
- Paraphrase and summarize as needed.

E. Participate in small and large group discussions and presentations.

- Initiate everyday conversation.
- Select and present an oral reading on an assigned topic.
- Conduct interviews.
- Organize and participate in informal debate around a specific topic.

Reading, Writing, Speaking and Listening

1.8.8 Research

A. Select and refine a topic for research.

B. Locate information using appropriate sources and strategies.

- Determine valid resources for researching the topic, including primary and secondary sources.
- Evaluate the importance and quality of the sources.
- Select essential sources (e.g., dictionaries, encyclopedias, other reference materials, interviews, observations, computer databases).
- Use tables of contents, indices, key words, cross-references and appendices.
- Use traditional and electronic search tools.

C. Organize, summarize and present the main ideas from research.

- Identify the steps necessary to carry out a research project.
- Take relevant notes from sources.
- Develop a thesis statement based on research.

Reading, Writing, Speaking and Listening

1.8.11 Research

A. Select and refine a topic for research.

B. Locate information using appropriate sources and strategies.

- Determine valid resources for researching the topic, including primary and secondary sources.
- Evaluate the importance and quality of the sources.
- Select sources appropriate to the breadth and depth of the research (e.g., dictionaries, thesauruses, other reference materials, interviews, observations, computer databases).
- Use tables of contents, indices, key words, cross-references and appendices.
- Use traditional and electronic search tools.

C. Organize, summarize and present the main ideas from research.

- Take notes relevant to the research topic.
- Develop a thesis statement based on research.

Environment and Ecology

4.2.10 Renewable and Nonrenewable Resources

C. Analyze how man-made systems have impacted the management and distribution of natural resources.

- Analyze the costs and benefits of different man-made systems and how they use renewable and nonrenewable natural resources.

Environment and Ecology

4.8.7 Humans and the Environment

C. Explain how human activities may affect local, regional and national environments.

- Explain how a particular human activity has changed the local area over the years.

D. Explain the importance of maintaining the natural resources at the local, state and national levels.

- Explain how human activities and natural events have affected ecosystems.
- Explain how conservation practices have influenced ecosystems.

Environment and Ecology

4.8.10 Humans and the Environment

A. Analyze how society's needs relate to the sustainability of natural resources.

- Describe how uses of natural resources impact sustainability.
- Analyze how human activities may cause changes in an ecosystem.
- Analyze and evaluate changes in the environment that are the result of human activities.
- Identify natural resources for which societal demands have been increasing.
- Describe the relationship between population density and resource use and management.

Geography

9.3.12 The Human Characteristics of Places and Regions

B. Analyze the significance of human activity in shaping places and regions by their cultural characteristics.

- Cultural conflicts (e.g., over language [Canada], over political power [Spain], over economic opportunities [Mexico]) Forces for cultural convergence (e.g., the diffusion of foods, fashions, religions, language)

- C. Analyze the significance of human activity in shaping places and regions by their settlement characteristics.
- Description of current and past settlement patterns at the international scale (e. g., global cities)
  - Forces that have reshaped settlement patterns (e. g., commuter railroads, urban freeways, the development of megalopoli and edge cities)

Science and Technology

3.8.10 Science, Technology and Human Endeavors

- A. Analyze the relationship between societal demands and scientific and technological enterprises.
- Identify past and current tradeoffs between increased production, environmental harm and social values (e.g., increased energy needs, power plants, automobiles).
  - Describe and evaluate social change as a result of technological developments.
  - Analyze a recently invented item, describing the human need that prompted its invention and the current and potential social impacts of the specific invention.

- C. Evaluate possibilities consequences and impacts of scientific and technological solutions.

- Relate scientific and technological advancements in terms of cause and effect.
- Describe and evaluate the impacts that financial considerations have had on specific scientific and technological applications.
- Compare and contrast potential solutions to technological, social, economic and environmental problems.
- Analyze the impacts on society of accepting or rejecting scientific and technological advances.

Science and Technology

3.8.12 Science, Technology and Human Endeavors

- A. Synthesize and evaluate the interactions and constraints of science and technology on society.
- Evaluate technological developments that have changed the way humans do work and discuss their impacts (e.g., genetically engineered crops).

Civics and Government

5.3.9 How Government Works

- A. Explain the structure, organization and operation of the local, state and national governments including domestic and national policy-making.
- D. Explain how independent government agencies create, regulate and enforce regulatory policies.

Civics and Government

5.3.12 How Government Works

- A. Analyze and evaluate the structure, organization and operation of the local, state and national governments including domestic and national policy-making.
- D. Interpret how independent government agencies create, regulate and enforce regulations.

Mathematics

2.3.8 Measurement and Estimation

- A. Develop formulas and procedures for determining measurements (e.g., area, volume, distance).
- D. Estimate, use and describe measures of distance, rate, perimeter, area, volume, weight, mass and angles.

Mathematics

2.3.11 Measurement and Estimation

- A. Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations.
- C. Demonstrate the ability to produce measures with specified levels of precision.

## ACTIVITY FIVE — PUBLIC AND PRIVATE PLACES

### OVERVIEW

All land in America is publicly or privately owned. While some kinds of private places, like a house, are obvious, others are not. Students will learn the difference between public and private places. They will look at local highways and streets and how they might be redesigned to accommodate walkers and bicyclists in addition to cars.

### KEY CONCEPTS

The most common public place that Americans experience on a daily basis is not a park, but highways, roads and streets. These public rights of way are not just for cars, but could accommodate pedestrians and bicyclists. They can also provide beauty and greenery as parks do.

### OBJECTIVES

Students will understand the difference between public and private places. They will demonstrate ways that public rights-of-way can be designed to accommodate more than just cars.

### SUBJECTS

Civics and Government

Environmental and Ecology

Mathematics

*(For specific standards, see box below)*

### TIME

Up to two classroom periods and several hours research outside the classroom

### MATERIALS

Camera and film

Paper and pencils (Optional posterboard)

Engineer's scale (This is a standard size ruler, obtainable at any stationery store) that measures feet in relation to inches, including

1" = 10'

1" = 20'

1" = 50'

1" = 100'

### BACKGROUND

The ownership of every piece of real estate in America — public or private — is recorded at the local county courthouse. When a property changes hands, that information is recorded at the courthouse.

Many young people may think that shopping malls or fast food restaurants are public places, when in fact they are private places to which the public is invited under certain conditions.

The most common public place — the place that people experience every day — is the street or highway. These places are owned by the state or local governments and connect all the private places.

Rivers and streams, as well as public parks, are public places. Farms and many forests are private places. Some forests are part of state or federal parks.

Although streets and highways are most commonly used by car, they need not be exclusively used for cars. Streets and highways — public rights-of-way — can be considered places where any member of the public can safely gather. Increasingly across America, state departments of transportation and municipalities are rearranging rights-of-way to include places for walkers and bicyclists as well as for cars.

## **PROCEDURE**

1. Ask students to take photos of a variety of buildings and places in your community. The photos can either be slides which will later be shown to the class as a whole, or prints to be mounted on posterboard. Ask them to measure the width of some prominent streets and highways in your community.

The photos can include:

A corporate center	Houses
Office building in a traditional town	Back yards
Factory	A shopping street in a traditional town
River or creek	A fast-foot restaurant
Public park	Shopping mall or strip mall
Farm scene	Private school
Forest scene	Public school
Suburban street	Parking lot
A street map of a town	Rural highway
A road map	

2. Display the photos either as slides or prints on posterboard. Go through each photo and ask students to determine whether it is a public or private place.

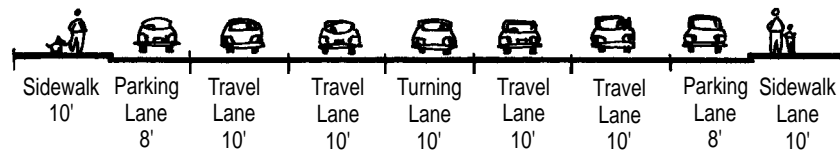
SEE SAMPLE PHOTOS AND CAPTIONS

3. Ask students what public place people use the most often.
4. Ask students to think about the streets and highways in your community. Is all the space devoted exclusively to cars? Do any of them have trees along them to provide a pleasant atmosphere? Do any of them have safe places for people to walk? For people to ride a bicycle? How easy it is to walk around your community?

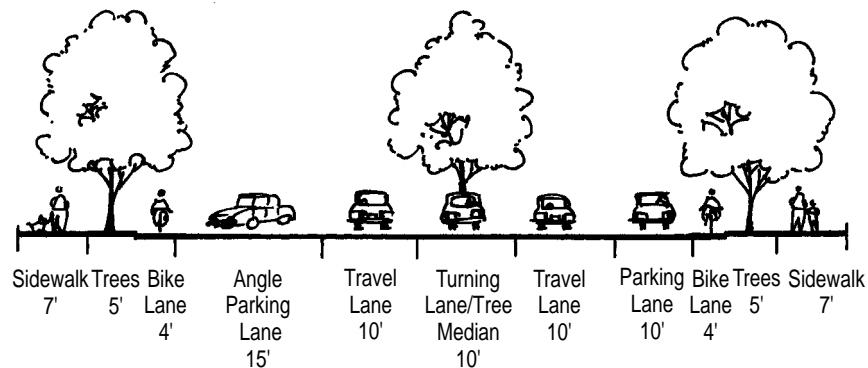
5. Ask students to measure out the width of a rural road and of a prominent street from your community on a piece of paper using an engineer's scale, at a scale of 1" = 10'
6. Have students divide the right-of-way into lanes for various uses, measured out with the engineer's scale. The uses might include pedestrian walks, bicycle lanes, and spaces for trees as well as lanes for cars.

SEE SAMPLE BELOW  
Scale Shown 1" = 40'

SAMPLE: Pottstown's Main Street Today



SAMPLE: Pottstown's Main Street Redesigned



This city street has room for trees, cars, walkers and bicyclists. How many roads in your community have special lanes for walkers and bicyclists?



This rural road has also set aside room for walkers and bicyclists. How many rural roads in your community have set aside space for trees, greenery, walkers and bicyclists?



## SAMPLE ACTIVITY FIVE: PUBLIC AND PRIVATE PLACES



Tom Hylton's house. The house and driveway are private, but the street and sidewalk in front of the house is a public place. Any law-abiding citizen has right to use it.



The mall is another private place. Although members of the public are welcome to shop, the mall owners set the conditions. For example, demonstrators for a cause may only come on mall property with permission. But a municipality must allow people to demonstrate on a main street, subject to certain restrictions to ensure it is done safely.



Pottstown Middle School is a public place regulated by the Pottstown School Board.



This township road is a public place, but it is only feasible for people with cars to use this place. Have any provisions been made for walkers or bicyclists?



Although McDonald's serves the public, it is not a public place. It owned by a private individual or company.



Most people think of a traditional park when they think of a public space. This is a place where anyone can gather. But few people visit a park every day.



High Street, the main street of Pottstown, is a public place. Although the stores on either side of the street are private, anyone has a right to be on the sidewalk or drive a car on the street.



This map shows the most common public place — the road or street. Public roads connect all private land. They are the way we get around, and we use them daily. But they don't need to be just for cars.

STATE STANDARDS FOR ACTIVITY FIVE

Civics and Government

5.3.9 How Government Works

- A. Explain the structure, organization and operation of the local, state and national governments including domestic and national policy- making.
- D. Explain how independent government agencies create, regulate and enforce regulatory policies.
  - Local (e. g., Zoning Board)

Civics and Government

5.3.12 How Government Works

- A. Analyze and evaluate the structure, organization and operation of the local, state and national governments including domestic and national policy- making.

Environment and Ecology

4.8.7 Humans and the Environment

- A. Describe how the development of civilization relates to the environment.
  - Explain how people use natural resources in their environment.

Geography

9.3.9. The Human Characteristics and Place and Regions

- A. Explain the human characteristics of places and regions by their population characteristics.
  - Effects of different types and patterns of human movement
  - Mobility (e. g., travel for business)
- C. Explain the human characteristics of places and regions by their settlement characteristics.
  - Current and past settlement patterns in Pennsylvania and the United States
  - Forces that have re- shaped modern settlement patterns (e. g., central city decline, suburbanization, the development of transport systems)
  - Internal structure of cities(e. g., manufacturing zones, inner and outer suburbs, the location of infrastructure)

Geography

9.4.9 The Interactions Between People and Places

- B. Explain the impacts of people on physical systems.
  - Forces by which people modify the physical environment (e. g., increasing population; new agricultural techniques; industrial processes and pollution)

Mathematics

2.3.8 Measurement and Estimation

- A. Develop formulas and procedures for determining measurements (e.g., area, volume, distance).
- D. Estimate, use and describe measures of distance, rate, perimeter, area, volume, weight, mass and angles.
- F. Use scale measurements to interpret maps or drawings.
- G. Create and use scale models.

Mathematics

2.3.11 Measurement and Estimation

- A. Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations.
- C. Demonstrate the ability to produce measures with specified levels of precision.

## ACTIVITY SIX — ZONING AND PREFERENCES

### OVERVIEW

Students learn the basics of zoning and subdivision laws. They take a critical look at their community and rate the appearance and livability of what they see. Then they recommend zoning laws that might help make their communities better.

### KEY CONCEPT

Zoning laws do much to determine the appearance of their community.

### OBJECTIVES

Students will be able to recognize what is good and bad about their community's appearance and livability. They will understand the purpose of zoning and subdivision laws.

### SUBJECTS

Civics and Government  
Arts and Humanities  
Environment and Ecology  
Reading, Writing, Speaking and Listening  
*(For specific standards, see box below)*

### TIME

Two classroom periods plus two hours' hours outside the classroom.

### MATERIALS

Camera  
Film

### BACKGROUND

Town Planner Tony Nelessen helps people decide on zoning laws to regulate the appearance of their community. He begins by showing residents 240 slides, some taken of the community, and others taken from all around the country. Participants each have their own grading sheet in which they give each photo a "grade" ranging from +10 to -10. Positive grades are given to scenes people would like to see in their communities, and negative grades are given to scenes they would not want to see in their communities.

At a subsequent meeting, Nelessen shows the slides again. This time he reports the average grades given to each photograph by the participants. The community is then encouraged to enact zoning laws that will bring about the kinds of places people want for their communities

### Zoning and subdivision laws

Every state in the United States has created local municipalities such as counties, cities, towns, and townships. These local municipalities have been given the power to determine how land is used through zoning laws and subdivision laws.

Zoning laws are designed to provide for the orderly development of the community and to protect forests, wetlands, prime farmland, and other natural and historic resources. They must provide for every kind of land use, such as

Housing	Parks
Offices	Schools and other institutions
Manufacturing plants	Quarries
Stores	

**Zoning laws may generally regulate:**

- 3 The uses of land: some areas may be designated just for housing and other areas just for manufacturing, or a municipality may allow a mix of uses in one area.
- 3 The size, height, bulk, location, removal and uses of all buildings and other structures.
- 3 The size of the land on which buildings may be constructed, and how far back from the street or property line that buildings may be located. For example, a zoning ordinance might say there must be 1 acre of land for every house, or 1/2 acre of land for every house. An ordinance might say houses must be set back 40 feet from the street, or might say they must be built up against the street.

**Subdivision laws may generally regulate:**

- 3 The size of the land on which buildings may be constructed, and how far back from the street or property line that buildings may be located, if this is not in a zoning law.
- 3 The size, specification and layout of streets and the location of utilities such as water and sewer lines.
- 3 The design of the proposed use of the land, including landscaping.
- 3 Whether or not the developer must set aside land for public parks, and the design of those public places.

**PROCEDURE**

- 1. Review the purpose of zoning and land use laws with students, using the information in the teacher background section above. You might also obtain zoning and subdivision information — and perhaps a speaker — from the planning department of your city, township, or county.
- 2. Break students into teams, each with a camera and film.
- 3. Have student take photos of scenes from around their community. The scenes might include:

Their school	A factory
A group of houses	A parking lot
A strip shopping center	The main street of a traditional town
A commercial highway	A park or playground
Corporate offices	

- 4. Students then choose 10 photos that illustrate the best and worst of the community and glue them on a poster or on separate sheets of paper. Each photo is given a rating of +10 to -10, and paragraph explaining reasons for each rating is attached to each photograph.

SEE SAMPLES, PAGE 54

5. After everyone in the class has had a chance to look at the photos, students discuss what elements make for attractive scenes and unattractive scenes.
6. Students then list rules they might want to see incorporated into their local zoning laws to make their community as attractive as possible. Ask students to appear before a meeting of your local town council, board of supervisors, or board of commissioners to present their findings. Nearly all elected officials have meetings where time is set aside for members of the public to speak. (It would be best to contact your municipality ahead of time to make arrangements for a student presentation.)

SAMPLES — ACTIVITY SIX PHOTOS RATED BY TOM HYLTON



**RATING** ..... - 2

Although the houses are fairly attractive, you are overwhelmed with garage doors. The garages could either be set back behind the house or facing an alley behind the house. No landscaping .

**LAW NEEDED:** Garages must be at the rear of buildings or set at the side in such a way as garage doors are not visible from the street. Trees must be planted along every new street or streets where new buildings are being constructed.



**RATING** ..... + 8

These houses are placed close enough so people can walk places, but the abundance of big trees gives an ample feeling of nature.

**LAW NEEDED:** All houses must be placed close to the street, with sidewalks and street trees along every street. Cars must be parked on the street or in garages off alleys to the rear of the property.



**RATING** ..... - 9

Yuk! Not only is the Wal-Mart an ugly building, but there's a huge sea of asphalt in front of it.

**LAW NEEDED:** Retail buildings must not take up more than a half-acre of land, if more space is needed they should be two or more floors. Buildings should be closer to the street, and one tree must be planted in a parking lot for each five parking spaces.



**RATING** ..... -1

Big houses plopped into a field. They waste a huge amount of land and don't even provide privacy. Bet these homeowners spend a lot of time in their cars.

**LAW NEEDED:** Houses may not be built on lots larger than 1/2 acre, and all streets must have sidewalks or foot paths along them to encourage walking .



**RATING** ..... - 7

A jumble of big signs, parked cars, telephone polls, no space for walkers or bikers — bad news!

**LAW NEEDED:** All streets must have sidewalks, with shade trees planted in five foot strips between the curb and sidewalk.



**RATING** ..... +7

The store here is located in a nice building next to the sidewalk, at a size that makes humans feel comfortable. The parking lot is at the rear.

**LAW NEEDED:** Stores should be placed close to streets where there are sidewalks, and parking lots should be placed behind the stores with provisions that people can walk to the front of the buildings.

STATE STANDARDS FOR ACTIVITY SIX

Civics and Government

5.2.12 Rights and Responsibilities of Citizenship

- A. Evaluate an individual's civic rights, responsibilities and duties in systems of government.
- B. Compare and evaluate the participatory role of citizens' rights and responsibilities
- C. Analyze the triggers of conflict in society and techniques to resolve them.
- D. Evaluate the roles of political leadership and public service in a constitutional democracy.
- E. Analyze how participating in civic and political life leads to the attainment of individual and public goals.

Civics and Government

5.3.9 How Government Works

- A. Explain the structure, organization and operation of the local, state and national governments including domestic and national policy-making.
- D. Explain how independent government agencies create, regulate and enforce regulatory policies.
  - Local (e. g., Zoning Board)

Civics and Government

5.3.12 How Government Works

- A. Analyze and evaluate the structure, organization and operation of the local, state and national governments including domestic and national policy-making.
- D. Interpret how independent government agencies create, regulate and enforce regulations.

Arts and Humanities

9.1.3/9.1.5/9.1.8/9.1.12 Production, Performance and Exhibition of Dance, Music, Theatre and Visual Arts

- B. Recognize, know, use and demonstrate a variety of appropriate arts elements and principles to produce, review and revise original works in the arts.
  - Visual Arts: paint , draw, craft, sculpt, print, design for environment, communication, multi- media

9.3.8/ 9.3.12 Critical Response

- A. Know and use the critical process of the examination of works in the arts and humanities.
  - Compare and contrast
  - Analyze
  - Interpret
  - Form and test hypotheses
  - Evaluate/ form judgments
- A. Explain and apply the critical examination processes of works in the arts and humanities.
  - Compare and contrast
  - Analyze
  - Interpret
  - Form and test hypotheses
  - Evaluate/ form judgments

Environment and Ecology

4.8.7 Humans and the Environment

- A. Describe how the development of civilization relates to the environment.

- C. Explain how human activities may affect local, regional and national environments

Environment and Ecology

4.9.10 Environmental Laws and Regulations

- A. Explain why environmental laws and regulations are developed and enacted.
  - Explain the positive and negative impacts associated with passing environmental laws and regulations.
  - Understand conflicting rights of property owners and environmental laws and regulations.
  - Analyze the roles that local, state and federal governments play in the development and enforcement of environmental laws.

Environment and Ecology

4.9.12 Environmental Laws and Regulations

- A. Analyze environmental laws and regulations as they relate to environmental issues.
  - Analyze and explain how issues lead to environmental law or regulation (e.g., underground storage tanks, regulation of water discharges, hazardous, solid and liquid industrial waste, endangered species).
  - Compare and contrast environmental laws and regulations that may have a positive or negative impact on the environment and the economy.
  - Research and describe the effects of an environmental law or regulation and how it has impacted the environment.

Reading, Writing, Speaking and Listening

1.6.8 Speaking and Listening

- A. Listen to others.
  - Ask probing questions.
  - Analyze information, ideas and opinions to determine relevancy.
  - Take notes when needed.
- D. Contribute to discussions.
  - Ask relevant, probing questions.
  - Respond with relevant information, ideas or reasons in support of opinions expressed. Listen to and acknowledge the contributions of others.
  - Adjust tone and involvement to encourage equitable participation.
  - Clarify, illustrate or expand on a response when asked.
  - Present support for opinions.
  - Paraphrase and summarize, when prompted.
- E. Participate in small and large group discussions and presentations.
  - Initiate everyday conversation.
  - Select a topic and present an oral reading.
  - Conduct interviews as part of the research process.
  - Organize and participate in informal debates.
- F. Use media for learning purposes.
  - Use various forms of media to elicit information, to make a student presentation and to complete class assignments and projects.
  - Evaluate the role of media in focusing attention and forming opinions.

Reading, Writing, Speaking and Listening

1.6.11 Speaking and Listening

A. Listen to others.

- Ask clarifying questions.
- Synthesize information, ideas and opinions to determine relevancy.
- Take notes.

D. Contribute to discussions.

- Ask relevant, clarifying questions.
- Respond with relevant information or opinions to questions asked.
- Listen to and acknowledge the contributions of others.
- Adjust tone and involvement to encourage equitable participation.
- Facilitate total group participation.
- Introduce relevant, facilitating information, ideas and opinions to enrich the discussion.
- Paraphrase and summarize as needed.

E. Participate in small and large group discussions and presentations.

Reading, Writing, Speaking and Listening

1.8.8 Research

C. Organize, summarize and present the main ideas from research.

- Identify the steps necessary to carry out a research project.
- Take relevant notes from sources.
- Develop a thesis statement based on research.

Reading, Writing, Speaking and Listening

1.8.11 Research

C. Organize, summarize and present the main ideas from research.

- Take notes relevant to the research topic.
- Develop a thesis statement based on research.



## ACTIVITY SEVEN — MEASURING USING USGS MAPS

### OVERVIEW

Students will learn how to evaluate their community with the help of United States Geological Survey (USGS) maps, which allow students to easily measure the location of the physical elements of the community (stores, houses, schools, parks) and the distance between these things.

### KEY CONCEPT

The more randomly that houses, stores and schools are placed, the more inefficient it is to use and maintain a community. The farther apart that buildings are placed, the more difficult it is to use anything but a car to get around.

### OBJECTIVES

Students will be able to evaluate how well their community is arranged.

### SUBJECTS

Mathematics

Geography

Environment and Ecology

Reading Writing, Speaking and Listening

Civics and Government

*(For specific standards, see box below)*

### TIME

One to two classroom periods.

### MATERIALS

USGS maps.

- The United States Geological Survey produces topography maps of the entire United States to various scales.
- Among the maps available are 7.5 minute series topographic maps. Each map, which measures 17" by 22," covers 57 square miles. The scale of these maps is 1:24 000, which is the equivalent of one inch equals 2,000'.
- USGS 7.5 minute maps are available for your community at local map stores, or direct from the US Geological Survey:

Call: 1-888-ASK-USGS (1-888-275-8747)

Write: USGS Information Services

Box 25286

Denver, CO 80225

Internet: <http://mapping.usgs.gov/>.

- USGS 7.5 minute quadrangle topographic maps are generally named for the nearest town on the map

- USGS maps provide an opportunity for students to measure their communities and see how well houses, stores, schools and parks have been arranged there. The maps also allow students to measure walking and bicycling distances.

A ruler

Pins with colored heads or thumbtacks

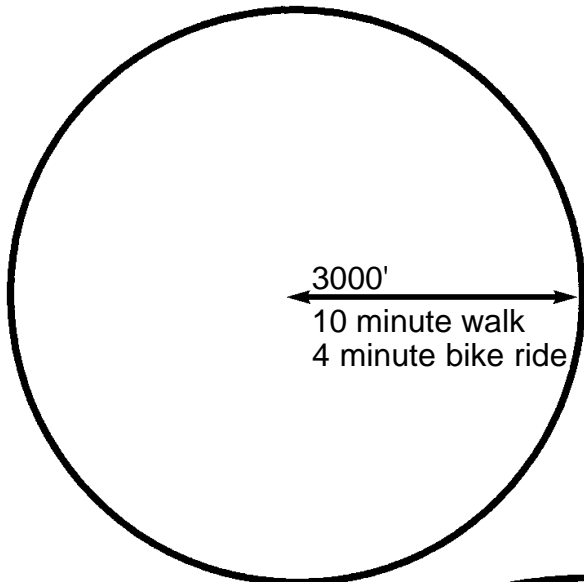
A drawing compass

## **PROCEDURE**

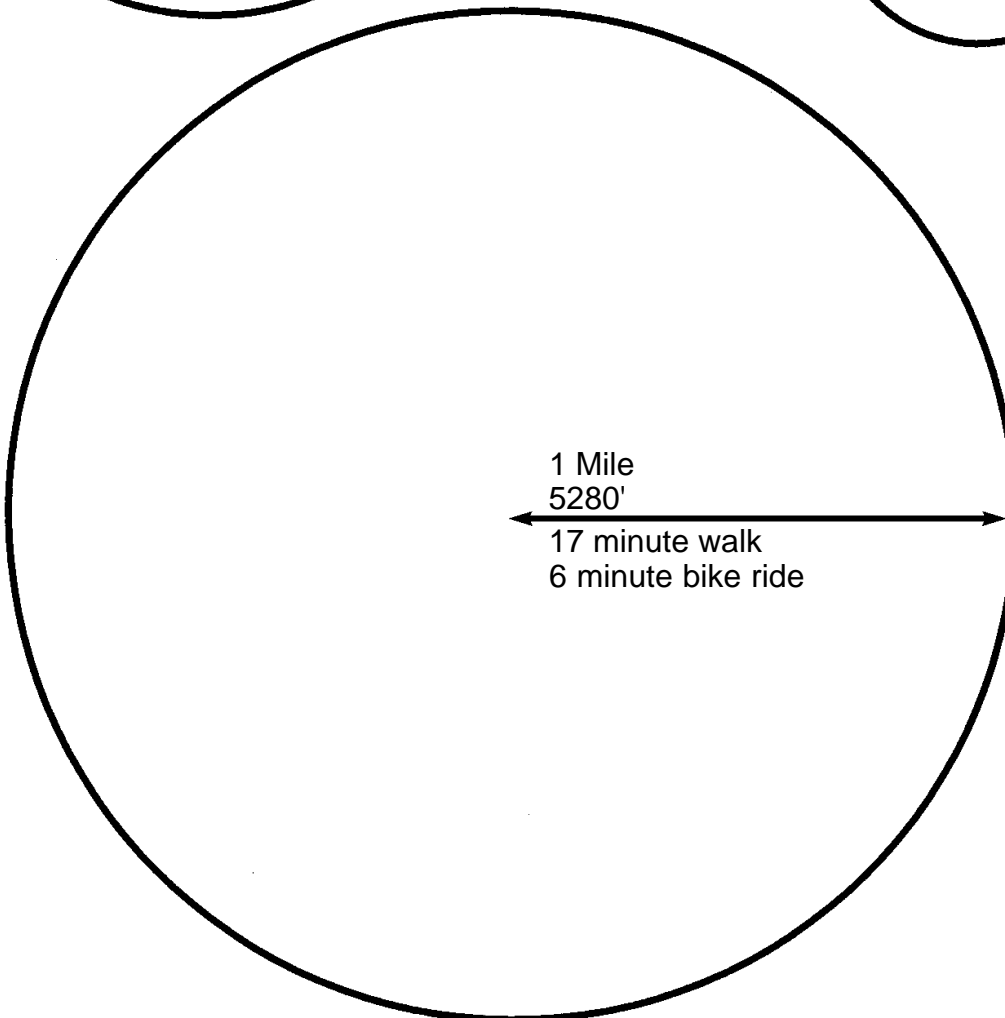
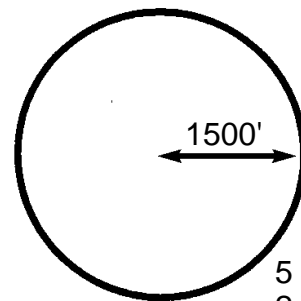
1. Obtain one or more USGS maps to cover the area of your entire school district, if possible.
2. Locate your school, other schools in the district, and other community gathering places such as stores. Place pins on those places.
3. Ask students to locate their homes on the maps.
4. Ask students to cut out circles from page 59 showing walking distances at a scale of 1:24 000 (1" = 2,000'). Place the circles on your school to determine five minute, 10 minute, and 17 minute walks from your school.
5. Do the same for other prominent community places, and for the home of each student.
6. Make a list of things that are within walking distance of your school.
7. Compare your map to the map of Pottstown. The map shows a circle centered around Tom Hylton's home at 222 Chestnut Street, and the accompanying chart shows some of the things that are within easy walking distance of the Hyltons' house.
8. Ask students to evaluate how well things are arranged in your community.
  - Are things located conveniently close to each other?*
  - Is it feasible and safe to walk or ride a bicycle from place to place?*
  - Are parks and areas of open space easily accessible to everyone in the community?*
  - How could your community be arranged better?*
9. Ask students to appear before a meeting of your local town council, board of supervisors, or board of commissioners to present their findings. Nearly all elected officials have meetings where time is set aside for members of the public to speak. (It would be best to contact your municipality ahead of time to make arrangements for a student presentation.)

# TEMPLATES FOR WALKING/BICYCLING DISTANCES

FOR USGS 7.5 MINUTE MAPS SCALE: 1:24 000 1"=2,000 feet



- The average person walks about 300 feet per minute.
- The average bicyclist rides at 900 feet per minute.
- Photocopy and cut out for use on USGS 1:24 000 scale maps



Everything on this page is to 1:24 000 scale  
 1" = 2,000'

This is the scale for 7.5 minute USGS maps

The average person walks about 300 feet per minute.

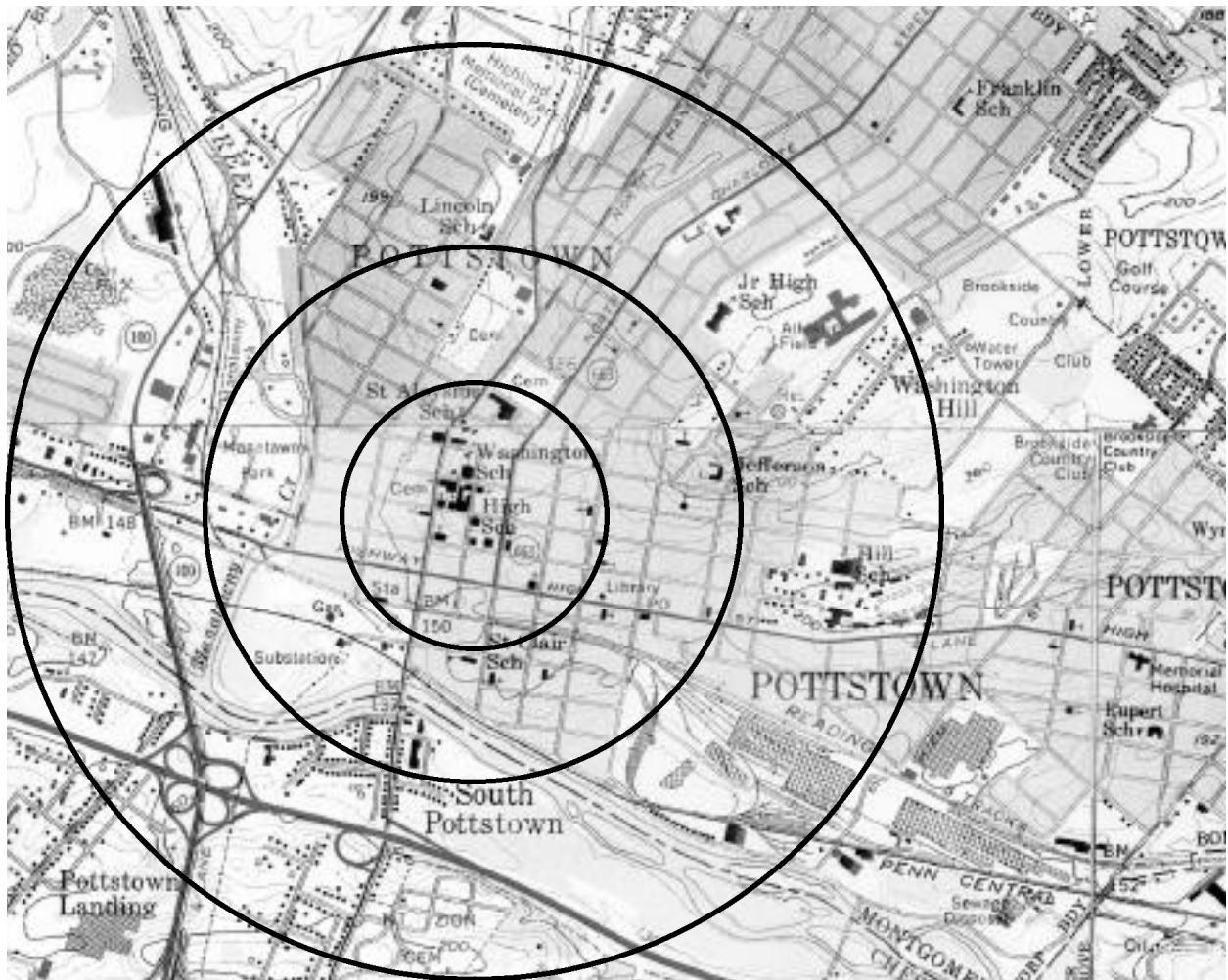
These circles show how far an average person can walk in:

- 5 minutes
- 10 minutes
- 17 minutes

Tom Hylton's town of Pottstown has sidewalks, so he can walk everywhere.

Here is the walking distance from Tom Hylton's house to:

Mercury newspaper (where he worked 22 years) . . . . .	2 minutes
Dentist . . . . .	2 minutes
Churches . . . . .	3 minutes
Corner grocery . . . . .	3 minutes
Camera shop . . . . .	3 minutes
Post office substation . . . . .	4 minutes
Bank . . . . .	5 minutes
Pharmacy . . . . .	5 minutes
Town hall . . . . .	5 minutes
Public library . . . . .	6 minutes
Pottstown's public park . . . . .	10 minutes
Elementary school where Mrs. Hylton teaches . . . . .	11 minutes
High school . . . . .	12 minutes
Supermarket . . . . .	15 minutes
Video rental store . . . . .	15 minutes
Wal-Mart . . . . .	15 minutes



STATE STANDARDS FOR ACTIVITY SEVEN

Civics and Government

5.2.12 Rights and Responsibilities of Citizenship

- A. Evaluate an individual's civic rights, responsibilities and duties in systems of government.
- B. Compare and evaluate the participatory role of citizens' rights and responsibilities
- C. Analyze the triggers of conflict in society and techniques to resolve them.
- D. Evaluate the roles of political leadership and public service in a constitutional democracy.
- E. Analyze how participating in civic and political life leads to the attainment of individual and public goals.

Civics and Government

5.3.9 How Government Works

- A. Explain the structure, organization and operation of the local, state and national governments including domestic and national policy-making.
- D. Explain how independent government agencies create, regulate and enforce regulatory policies.
  - Local (e. g., Zoning Board)

Civics and Government

5.3.12 How Government Works

- A. Analyze and evaluate the structure, organization and operation of the local, state and national governments including domestic and national policy-making.
- D. Interpret how independent government agencies create, regulate and enforce regulations.

Mathematics

2.3.8 Measurement and Estimation

- A. Develop formulas and procedures for determining measurements (e.g., area, volume, distance).
- D. Estimate, use and describe measures of distance, rate, perimeter, area, volume, weight, mass and angles.
- F. Use scale measurements to interpret maps or drawings.

Mathematics

2.3.11 Measurement and Estimation

- A. Select and use appropriate units and tools to measure to the degree of accuracy required in particular measurement situations.
- C. Demonstrate the ability to produce measures with specified levels of precision.

Geography

9.1.9 Basic Geographic Literacy

- A. Explain geographic tools and their uses.
  - Construction of maps
  - Projections
  - Scale
  - Symbol systems
  - Level of generalization
  - Types and sources of data
  - Mental maps to organize and understand the human and physical features of the United States

Geography

9.3.9. The Human Characteristics and Place and Regions

- C. Explain the human characteristics of places and regions by their settlement characteristics.
  - Current and past settlement patterns in Pennsylvania and the United States
  - Forces that have re- shaped modern settlement patterns (e. g., central city decline, suburbanization, the development of transport systems)
  - Internal structure of cities (e. g., manufacturing zones, inner and outer suburbs, the location of infrastructure)

Geography

9.3.12 The Human Characteristics and Place and Regions

- C. Analyze the significance of human activity in shaping places and regions by their settlement characteristics.
  - Use of models of the internal structure of cities (e. g., concentric zone model, sector theory, multiple nuclei theory)
  - Forces that have reshaped settlement patterns (e. g., commuter railroads, urban freeways, the development of megalopoli and edge cities)

Geography

9.4.9 The Interactions Between People and Places

- B. Explain the impacts of people on physical systems.
  - Forces by which people modify the physical environment (e. g., increasing population; new agricultural techniques; industrial processes and pollution)

Environment and Ecology

4.8.7 Humans and the Environment

- A. Describe how the development of civilization relates to the environment.
- C. Explain how human activities may affect local, regional and national environments

Reading, Writing, Speaking and Listening

1.6.8 Speaking and Listening

- A. Listen to others.
  - Ask probing questions.
  - Analyze information, ideas and opinions to determine relevancy.
  - Take notes when needed.
- D. Contribute to discussions.
  - Ask relevant, probing questions.
  - Respond with relevant information, ideas or reasons in support of opinions expressed. Listen to and acknowledge the contributions of others.
  - Adjust tone and involvement to encourage equitable participation.
  - Clarify, illustrate or expand on a response when asked.
  - Present support for opinions.
  - Paraphrase and summarize, when prompted.

- E. Participate in small and large group discussions and presentations.

- Initiate everyday conversation.
- Select a topic and present an oral reading.
- Conduct interviews as part of the research process.
- Organize and participate in informal debates.

F. Use media for learning purposes.

- Use various forms of media to elicit information, to make a student presentation and to complete class assignments and projects.
- Evaluate the role of media in focusing attention and forming opinions.

Reading, Writing, Speaking and Listening

1.6.11 Speaking and Listening

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Reading, Writing, Speaking and Listening

1.8.8 Research

C. Organize, summarize and present the main ideas from research.

- Identify the steps necessary to carry out a research project.
- Take relevant notes from sources.
- Develop a thesis statement based on research.

Reading, Writing, Speaking and Listening

1.8.11 Research

C. Organize, summarize and present the main ideas from research.

- Take notes relevant to the research topic.
- Develop a thesis statement based on research.

## ACTIVITY EIGHT — DESIGN YOUR OWN COMMUNITY

### OVERVIEW

Using what they have learned, students will design their own community and show their design with a basic plot plan.

### KEY CONCEPT

A well designed community has landscaped streets and a mixture of homes, stores, offices, schools, and parks within close proximity of each other.

### OBJECTIVES

Students will be able to design a community to scale, similar to plans by professional planners and engineers.

### SUBJECTS

Mathematics

Geography

Environment and Ecology

Reading Writing, Speaking and Listening

*(For specific standards, see box below)*

### TIME

Three-five classroom periods

### MATERIALS

One 30" x 40" posterboard (20" x 30" will do) or wide roll of drawing paper for each student team

Engineer's scale

Colored pencils

Thin cardboard templates of various buildings made from blackline masters on pages 65, 66 and 67.

### BACKGROUND

Students have now measured the size of various elements of the community: cars and trucks, streets and highways, offices and houses.

As a result of their visual preference survey, they have decided the kinds of development that are most attractive.

They have looked at various methods of personal transportation and what is needed to make each work.

They have looked at the ways things are arranged in their own community.

Now students will try to design their own community.

## **PROCEDURE**

1. The plot plan should be made at a scale of 1" = 50'. This matches the building templates on pages 65, 66 and 67.
2. Arrange students in teams, each using a 20"x30" posterboard. Ask students to draw as large a rectangle as possible to represent an area of land being developed.
3. Students can draw in a river or pond or lake if desired.
4. Based on the knowledge gained in Activity Three, measuring our community, ask students to draw in roads and define the location of parks, a place for stores, offices and homes of various kinds.
5. When student teams are finished, they will describe their community to the rest of the class and answer questions as to why they designed it the way they did.

## **TEMPLATES**

The following pages contain templates or footprints of various kinds of buildings: stores, offices, a school, apartments, various kinds of houses, and parking spaces.

You can photocopy these templates and have students use them directly for their ideal community, or use them as samples of building outlines. The students should be able to figure out how many square feet each building covers by using their engineer's scale.

In designing communities, students must allow enough room for parking spaces, as follows:

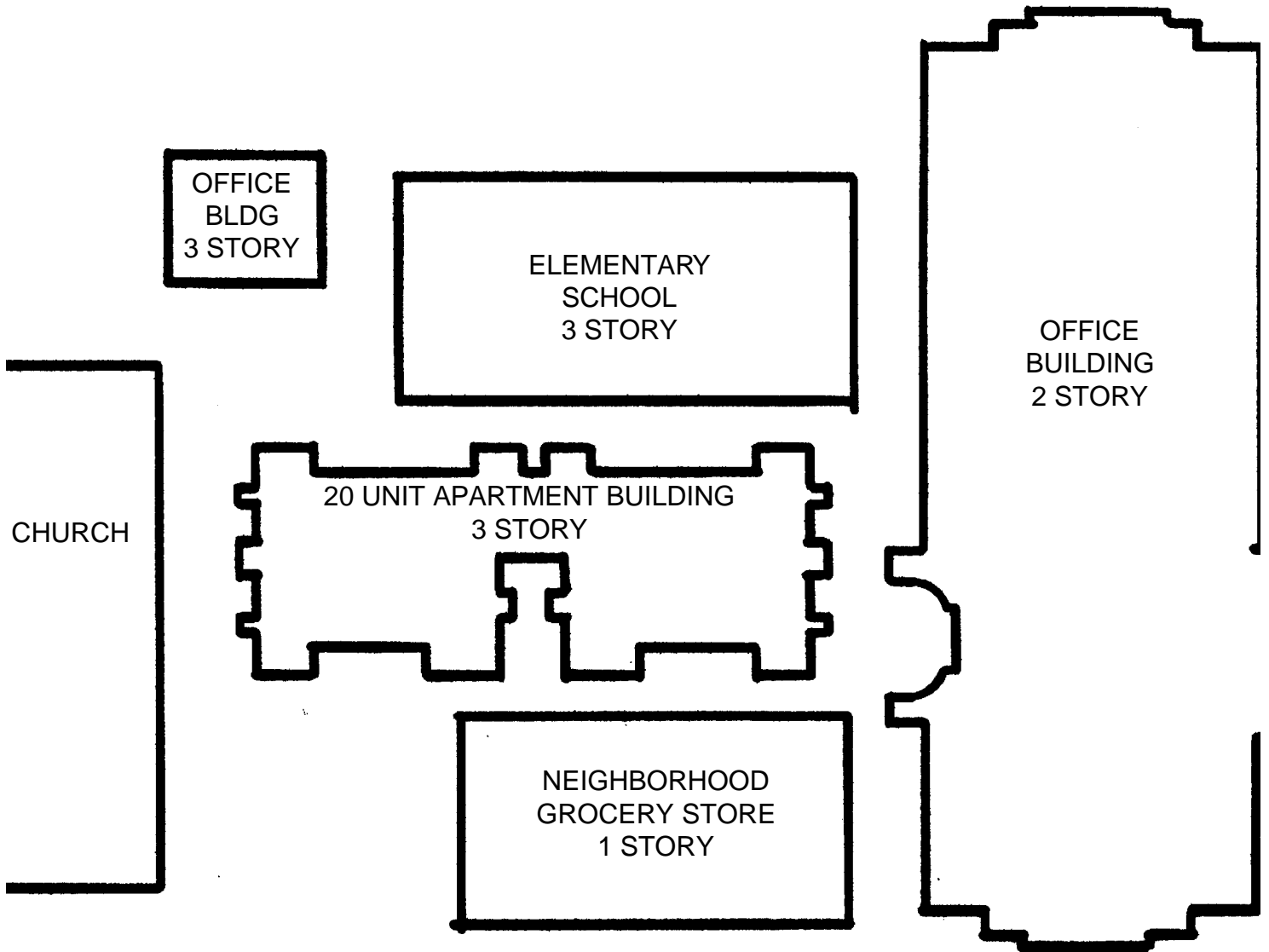
- 2 parking space per single family house
- 1 parking space per apartment
- 1 parking space for every 200 square feet of office space
- 1 parking space for every 200 square feet of retail space (stores)
- 1 parking space for each classroom in a school
- 1 parking space for each 50 square feet of a restaurant

If provisions are made for walking and bicycling in your ideal community, students may reduce the number of parking spaces.

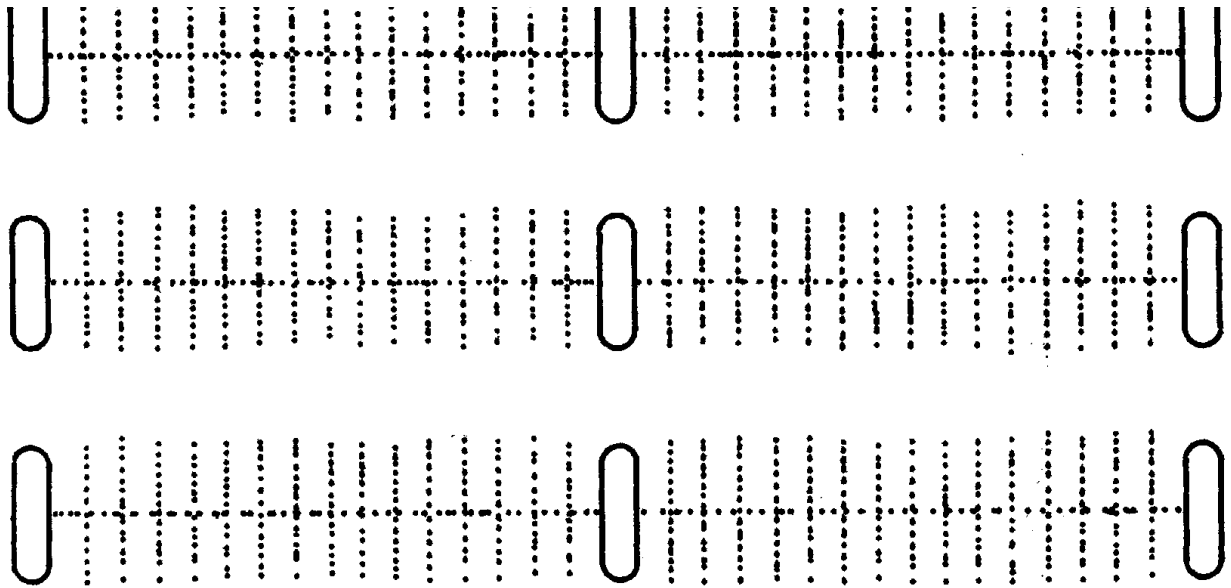
All templates are at a scale of 1" = 50'.



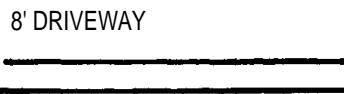
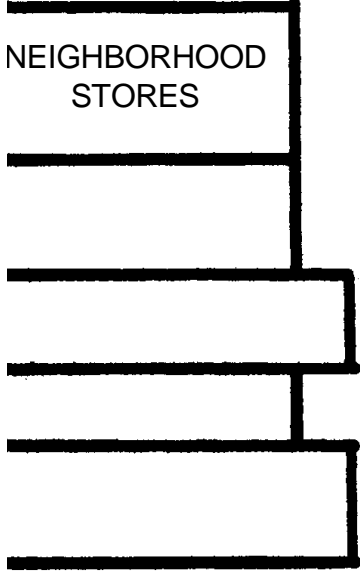
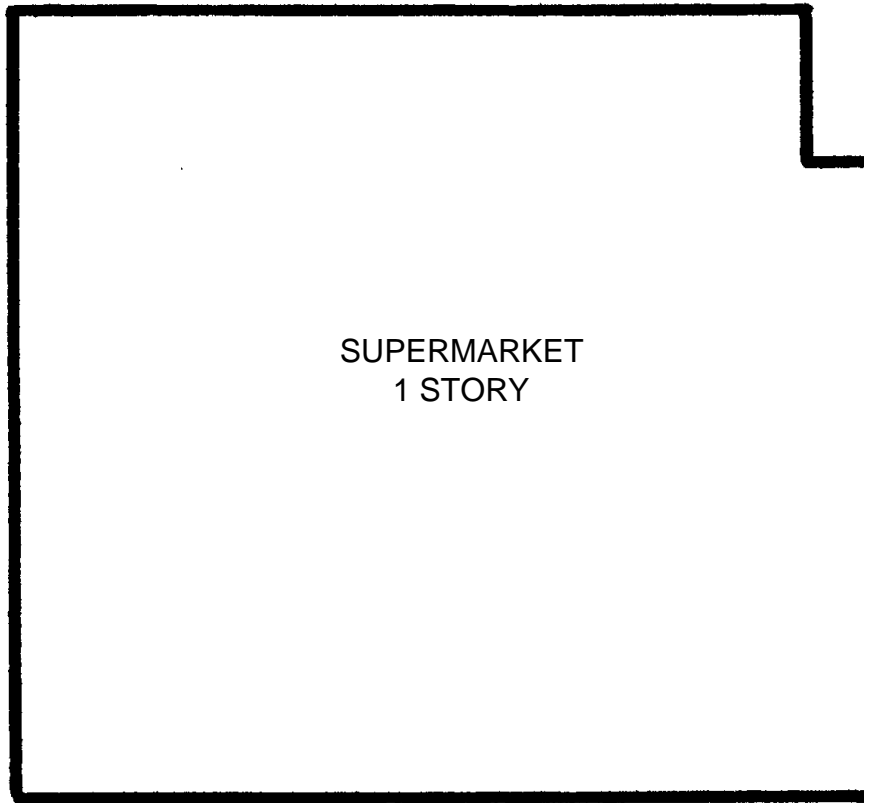
TEMPLATES FOR ACTIVITY EIGHT



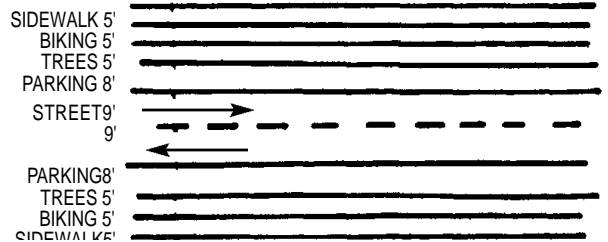
SCALE  
1"=50'



SCALE  
1"=50'



**66**



WALMART  
1 STORY

1 ACRE

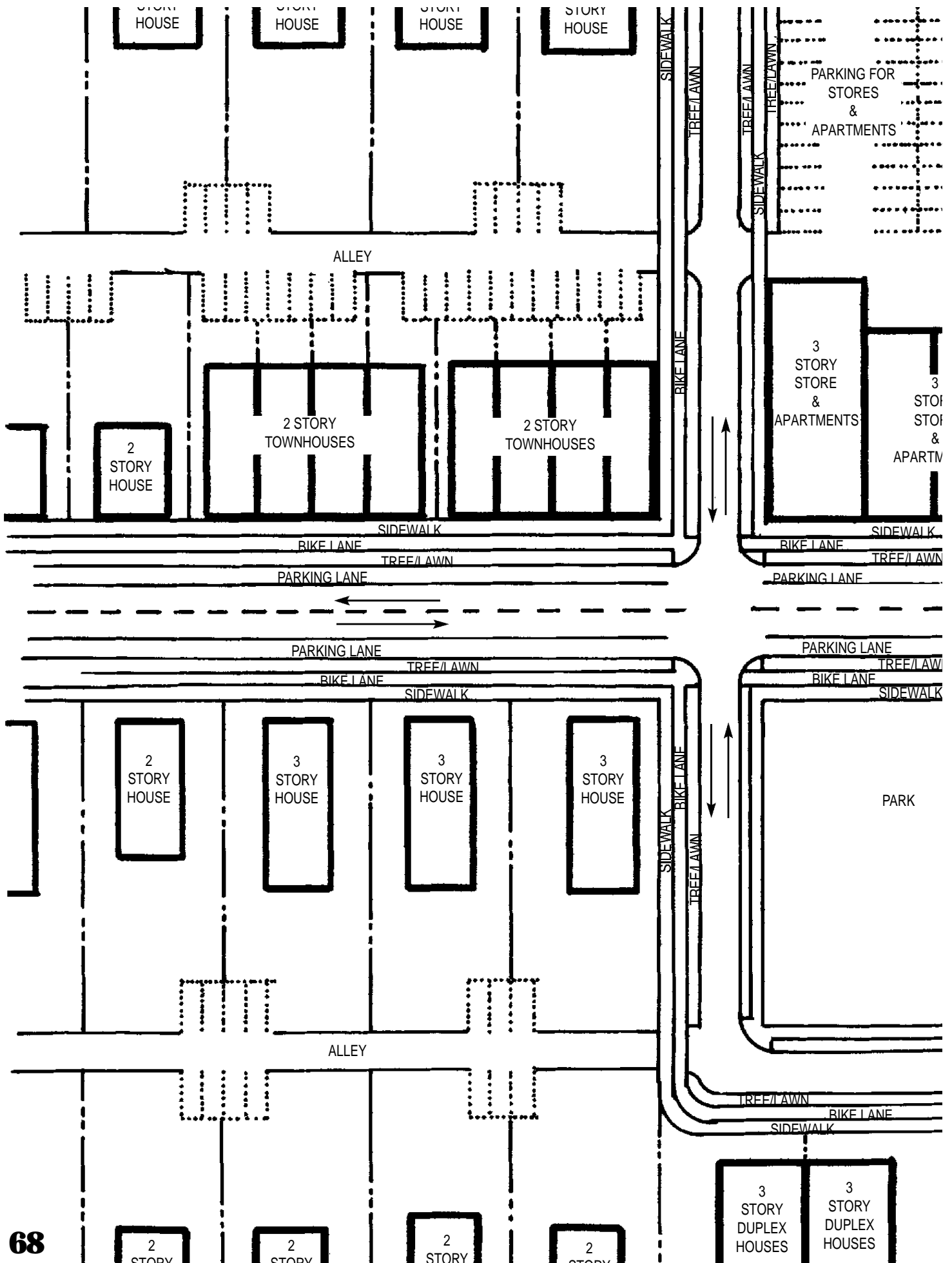
1/2 ACRE

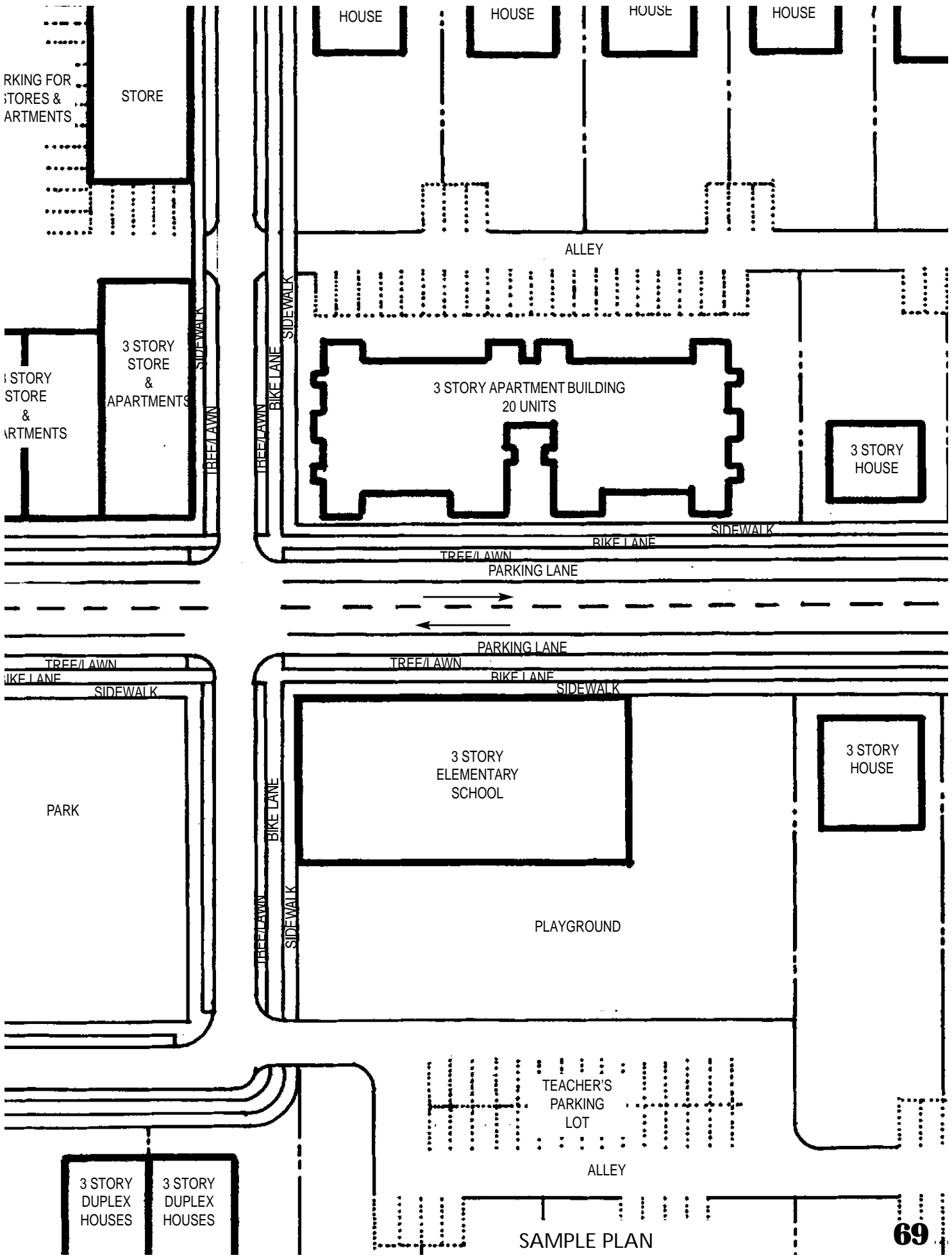
HOUSE  
2 STORY

HOUSE  
2 STORY

1/10 ACRE

**67**





SAMPLE PLAN

STATE STANDARDS FOR ACTIVITY EIGHT

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E. Participate in small and large group discussions and presentations.

## **GLOSSARY**

<b>Berm or shoulder</b>	A portion of land on the side of roads, usually but not always paved, where motor vehicles can pull off the road.
<b>Bond/Bond issue</b>	A bond is a long-term loan taken out by government, usually 10 to 20 years or more. Private investors buy portions of the bond and receive annual payments of interest and principle from the government until the bond is paid off. Offering a bond to the public is known as a bond issue.
<b>Brownfield</b>	Vacant land that was previously developed, usually for a manufacturing plant, but also for warehouses, quarries, dumps, or other uses. Originally, brownfields were used just to describe polluted sites, but the term has come to mean any previously developed site.
<b>Cartway</b>	The part of a street or highway that is used for motor vehicles.
<b>Development</b>	In the case of land use, development refers to streets, utility lines, houses, stores, factories, offices and other buildings where people live and work. Rural areas have very little development. When development comes to those areas, they are not rural anymore.
<b>FHA</b>	Federal Housing Administration. This federal agency was created in the 1930s to build and operate housing for low-income people. It also guaranteed mortgages so it would be easier for people to buy homes.
<b>Green belt</b>	A system, conceived in England, of establishing rings of land 5 to 15 miles wide around a traditional city or town where development is not allowed. The green belt prevents suburban sprawl and makes it easy for city and town dwellers to get to the countryside.
<b>Greenfield</b>	Farmland, meadows, woods, or any other site that has not been previously developed. Greenfields are usually found on the outskirts of towns or in rural areas.
<b>Greenway</b>	A walking or bicycling trail, often but not always along a river or stream .
<b>Growth boundary</b>	A line on a map drawn around a town or other developed area to delineate where development is allowed and where it is not. Planners usually include a 20-year supply of undeveloped land inside a growth boundary and revise the growth boundary every 10 years.



<b>Infrastructure</b>	Water and sewer lines, utility lines, highways and streets that are necessary for the development of offices, stores, factories and houses. Infrastructure is usually owned and maintained by the government or government regulated utilities.
<b>Junkscape</b>	The ugliness usually associated with commercial highways lined with strip malls, parking lots, fast-food restaurants, convenience stores, and other unattractive buildings.
<b>Land-use planning</b>	A system of planning whereby the government guides where development will and will not be allowed in the future, and how the streets, buildings, and parks will be arranged.
<b>Livability</b>	A term used by planners to indicate a community where it is pleasant and comfortable for people to live. Livability often refers to areas that have parks and sidewalks so people can move around without having to rely completely on cars.
<b>Municipality</b>	Local governments. The US Constitution recognizes the federal and state governments. State governments, in turn, create other smaller governments — municipalities — like cities, towns, counties, and townships.
<b>Plot plan</b>	A development plan similar to a blueprint that shows the outline, or “footprint,” of all existing and planned buildings and parking, and where existing and new streets and trees will be located.
<b>Right-of-way</b>	Land set aside for roads, streets, driveways, and underground pipes and utility lines. Rights-of-way are usually long linear ribbons of land. Public rights-of-way include streets and highways.
<b>Subdivision</b>	The subdividing of a piece of land, usually for development. A 125-acre farm, for example, might be subdivided into 100 house lots of 1 acre each, and the rest of the land would be used for streets.
<b>Suburban sprawl</b>	A pattern of development in which houses, stores, schools and offices are built at random over the landscape, usually marring the scenery and forcing everyone to drive for every activity.
<b>Sustainable</b>	Sustainable development allows people to enjoy high living standards while protecting and enhancing the environment. The most commonly used definition worldwide is: “Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” (World Commission on Environment and Development, 1987)

<b>Tax base</b>	Most local governments, including school districts, charge taxes annually on every piece of real estate within their boundaries. The more valuable the property, the higher the tax revenue the municipality receives. The real estate in any municipality is collectively known as the tax base. By encouraging development, municipalities can increase their tax base. Unfortunately, the costs of servicing that development is often much greater than the taxes it generates.
<b>Vista</b>	The landscape that people see from a highway or other vantage point.
<b>Zoning</b>	Local laws that regulate the use of land. Many local municipalities are divided into zones, each zone allowing certain uses like single family houses, rowhouses, offices, stores, and manufacturing plants. Traditional towns usually have a mix of uses, such as stores, homes, and offices, in the same neighborhoods. Newer suburbs often segregate these uses by zoning.

## **TEACHER RESOURCES**

### **Local municipalities:**

Most local municipalities throughout the United States have planning or code enforcement offices that can provide maps, zoning and subdivision ordinances, and other information about land use in your school district. Some planning departments will be willing to provide speakers. The members of your local town council, or board of supervisors or commissioners, might also be willing to visit your school.

### **On the internet:**

There are a wealth of internet sites with research and materials relating to land use planning and community building:

[www.cubekc.org](http://www.cubekc.org)

The Center for Understanding the Built Environment offers lessons, materials, and workbooks for students K-12 to understand towns and architecture.

[www.planning.org/educ/k12gener.htm](http://www.planning.org/educ/k12gener.htm)

The American Planning Association provides assistance to those teaching students in grades K-12 about city and regional planning. A free kit of materials is available by mail; contact the APA Education Program at 122 S. Michigan Avenue, Suite 1600, Chicago, IL 60603, call 312.431.9100, or e-mail [toeducation@planning.org](mailto:toeducation@planning.org) for your copy.

### *Resources Newsletter*

Resources newsletter is a quarterly publication from the American Planning Association for anyone interested in teaching children about city planning. Each issue highlights new and exemplary programs for teaching planning in grades K through 12. The newsletter covers not only traditional planning, but environmental, heritage, design, architectural, and social science teaching related to planning.

[www.sierraclub.org/sprawl/resources](http://www.sierraclub.org/sprawl/resources)

The Sierra Club has one of the nation's most comprehensive websites on sprawl, including reports, publications, and links to more than 150 websites relating to some aspect of sprawl, including:

- Transportation
- Bicycling and Walking
- Livable Communities
- Traffic calming
- Sprawl, land use and conservation

[www.smartgrowth.org](http://www.smartgrowth.org)

The Smart Growth Network is a partnership of government and non-profit organizations to promote development that:

- Protects the environment
- Enhances access to nature
- Practices land recycling (brownfields redevelopment)
- Is economical to build and maintain
- Promotes social justice

Its website is loaded with news about smart growth initiatives from around the country and publications and reports regarding the issue of sprawl.

[www.cnu.org](http://www.cnu.org)

The Congress for the New Urbanism is an alliance of architects, planners, builders and others who want to rediscover, rebuild and create new neighborhoods that house people of all ages, races, incomes within walking distance of each other.

[www.nthp.org](http://www.nthp.org)

The National Trust for Historic Preservation is committed to saving America's historic towns and neighborhoods, including older schools. Its Main Street program is working with hundreds of towns across the country on redevelopment projects.

[www.farmland.org](http://www.farmland.org)

The American Farmland Trust is the nation's leading organization for preserving farmland in America. Its website includes information on farmland preservation programs across the nation, including the total acreage of farms permanently preserved from development.

[www.epa.gov/brownfields](http://www.epa.gov/brownfields)

The Environmental Protection Agency's website on brownfields contains information on brownfields reclamation programs across the country.

[www.nrcs.usda.gov/](http://www.nrcs.usda.gov/)

The Natural Resources Conservation Service of the U.S. Department of Agriculture conducts an inventory every five years of all nonfederal land in the United States — some 75 percent of the country's land base. The inventory shows in rough terms how much land is developed in each state. Data on each state is posted on its website, along with conservation education materials for the classroom.

<http://mapping.usgs.gov/>

One stop information and shopping for United States Geological Survey maps. The website also contains information on teaching packets on map reading for elementary, middle, and high school students.

<http://www.sprawlwatch.org/>

Website itemizes ballot measures to preserve open space and manage growth across America.

## **BIBLIOGRAPHY**

### **Save Our Land, Save Our Towns**

*Thomas Hylton, photography by Blair Seitz*  
*Harrisburg: RB Books, 1995*

A color coffee table book on which the video is based, designed to be a quick read. It shows in words and pictures the relationship between the decline of our cities and towns and the loss of farmland and open space. Lists 10 rules for a quality community. Concludes with specific ways Americans can save their cities, towns and countryside.

### **Crabgrass Frontier**

*Kenneth T. Jackson*  
*Oxford University Press, 1985*

The definitive history of suburban sprawl in the United States by a Columbia University professor. Eminently readable.

### **Edge City: Life on the New Frontier**

*Joel Garreau*  
*New York, Doubleday, 1991*

The author, a reporter for the Washington Post, details how new, low density cities have sprung up on the fringes of traditional American cities. Clearly explains why America looks the way it does today.

### **Planning in the USA**

*Barry Cullingworth*  
*New York: Routledge, 1997*

Cullingworth is a professor from England who spent years teaching in the United States. An outstanding view of the American planning system from an outsider's perspective, and not at all boring.

### **Suburban Nation**

*Andres Duany, Elizabeth Plater-Zyberk, Jeff Speck*  
*New York: North Point Press, 2000*

Duany, an architect and town planner from Miami, has led the crusade to rediscover the virtues of traditional towns and build more of them in the future. He designed the town of Seaside, Florida, the first pedestrian community in perhaps 50 years. Duany is the most vibrant, persuasive, and energetic spokesman for the "neo-traditional" or "New Urbanist" movement.

### **Asphalt Nation**

*Jane Holtz Kay*  
*Berkeley: University of California Press, 1997*

A comprehensive review of the nation's decision since World War II to become totally car-dependent. Kay is architecture critic for *The Nation* magazine.

### **Holding Our Ground**

*Tom Daniels and Deborah Bowers*

*Washington, D.C.: Island Press, 1997*

The definitive book on farmland preservation efforts in America.

### **A Pattern Language**

*Christopher Alexander and others*

*New York: Oxford University Press, 1977*

A book revered by architects and town planners for more than 20 years, *A Pattern Language* contains 253 rules of thumb for creating warm and cosy places to live and work. In recent years, it has also obtained a following among computer geeks.

### **Comeback Cities**

*Paul Grogan and Tony Proscio*

*Boulder, CO: Westview Press, 2000*

The authors argue persuasively that America's big cities — although they remain overwhelming poor and working class — are becoming good places to live, thanks to reduced crime, local housing initiatives, and increased immigration.

### **American Apartheid**

*Douglas Massey and Nancy Denton*

*Cambridge, MA: Harvard University Press, 1993*

A definitive explanation of how blacks have become more segregated, over a longer period of time, than any other ethnic group in America.

### **The Great Good Place**

*Ray Oldenburg*

*New York: Paragon House, 1989*

The author argues that when Americans adopted a low density lifestyle, they lost the sense of place and belonging that traditional neighborhoods provided.

### **New Visions for Metropolitan America**

*Anthony Downs*

*Washington, D.C.: The Brookings Institution, 1994*

One of the nation's leading experts on development patterns, Downs lists the reasons why many Americans prefer suburban sprawl over traditional cities, and the shortcomings of the new system.

### **Changing Places**

*Richard Moe and Carter Wilkie*

*New York: Henry Holt, 1997*

An overview of suburban sprawl by the president of the National Trust for Historic Preservation.