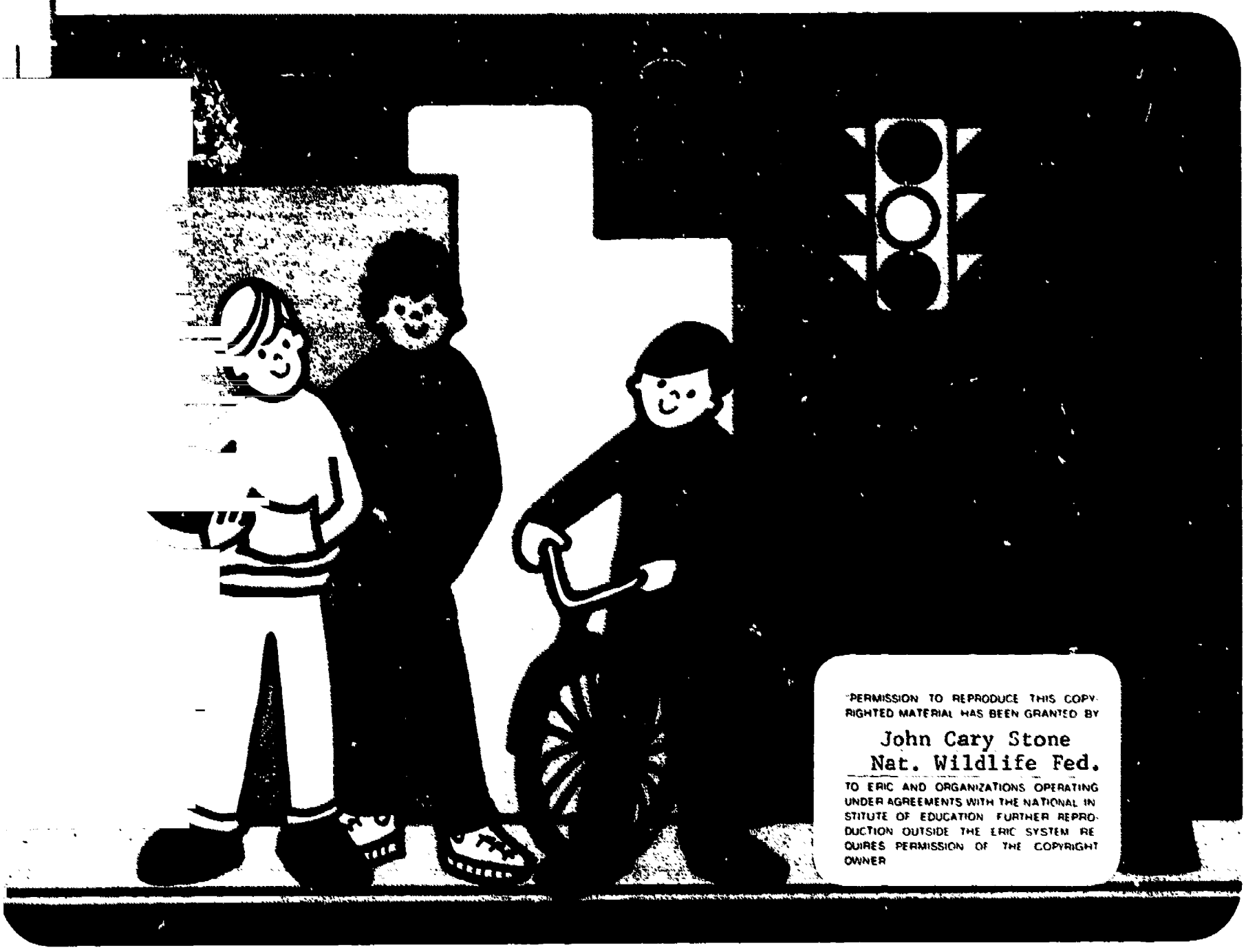
DOCUMENT RESUME

ED 103 240 SE 018 521

TITLE	Man's Habitat - The City, An Environmental Investigation.
INSTITUTION	Minnesota Environmental Sciences Foundation, Inc., Minneapolis.; National Wildlife Federation, Washington, D. C.
PUB DATE	71
NOTE	32p.; Related documents are SE 018 514-534
AVAILABLE FROM	National Wildlife Federation, 1412 16th Street, N.W., Washington, D.C. 20036 (Order No. 79061, $1.50)
EDRS PRICE	MF-$0.76 HC-$1.95 PLUS POSTAGE
DESCRIPTORS	Elementary Grades; *Environment; *Environmental Education; *Environmental Influences; Instructional Materials; Intermediate Grades; Investigations; Junior High Schools; *Learning Activities; Natural Resources; Science Education; Secondary Grades; Teaching Guides; *Urban Education

ABSTRACT

This environmental unit is one of a series designed for integration within an existing curriculum. In using these self-contained units, students are encouraged to work at their own speed. The philosphy behind the unts is based on an experience-oriented process that promotes independent work. This particular unit attempts to expand the student's understanding of environment by studying man's influence on the city. Activities center around an analysis of the local school community. Students learn the components of their school community and the relationships represented there. A community profile is developed through maps made from transects, survey questionnaires, photographs, and histograms based on data collected. On of the objectives included in this unit is that the students become concerned with their community problems and learn ways of becoming actively involved. This unit, designed for students in grades 4-9, contains information for teachers, such as materials needed, directions for the activities, sample survey summaries, and duplication materials for a student booklet. Additional activities are included at the end of the unit. (MA)



THE ENVIRONMENTAL UNITS

This is one of a group of Environmental Units written by the Environmental Science Center and published by the National Wildlife Federation.

In both theory and practice education is the essential base for long range local, regional and national programs to improve and maintain the quality of environment necessary for man's welfare and survival. Citizens must be aware of ecological relationships in order to recognize, appreciate and fulfill constructive roles in society. This awareness should be launched through the existing educational process—in classroom and related school activities. No special courses on ecology can replace the need to integrate ecological learning throughout the existing curricula of our school systems. Furthermore, the life styles and value-systems necessary for rational environmental decisions can best be acquired through repeated exposure to ecological learning which pervades the total educational experience.

It was with these thoughts that we developed these curriculum materials. They were designed for the classroom teacher to use with a minimal amount of preparation. They are meant to be part of the existing curriculum—to complement and enhance what students are already experiencing. Each unit is complete in itself, containing easy-to-follow descriptions of objectives and methods, as well as lists of simple materials.

The underlying philosophy throughout these units is that learning about the environment is not a memorization process, but rather an experience-oriented, experiment-observation-conclusion sort of learning. We are confident that students at all levels will arrive at intelligent ecological conclusions if given the proper opportunities to do so, and if not forced into "right" answers and precisely "accurate" names for their observations. If followed in principle by the teacher, these units will result in meaningful environmental education.

In the process of development, these units have been used and tested by classroom teachers, after which they have undergone evaluations, revisions and adaptations. Further constructive comments from classroom teachers are encouraged in the hope that we may make even more improvements.

A list of units in this group appears on the inside back cover.

About the National Wildlife Federation—1412 Sixteenth Street, N.W., Washington, D.C. 20036

Founded in 1936, the National Wildlife Federation has the largest membership of any conservation organization in the world and has affiliated groups in each of the 50 states, Guam, and the Virgin Islands. It is a non-profit, non-governmental organization devoted to the improvement of the environment and proper use of all natural resources. NWF distributes almost one million copies of free and inexpensive educational materials each year to youngsters, educators and concerned citizens. Educational activities are financed through contributions for Wildlife Conservation Stamps.

About the Environmental Science Center—5400 Glenwood Avenue, Minneapolis, Minnesota 55422

The Environmental Science Center, established in 1967 under Title III of the Elementary and Secondary Education Act is now the environmental education unit of the Minnesota Environmental Sciences Foundation, Inc. The Center works toward the establishment of environmental equilibrium through education—education in a fashion that will develop a conscience which guides man in making rational judgments regarding the environmental consequences of his actions. To this end the Environmental Science Center is continuing to develop and test a wide variety of instructional materials and programs for adults who work with youngsters.

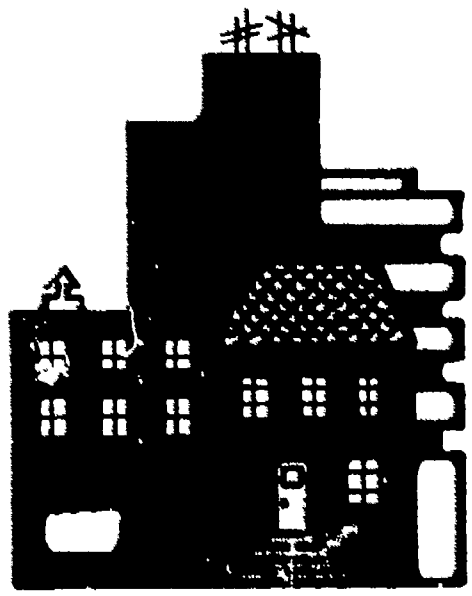
Man's Habitat—The City

An Environmental Investigation

BY

NATIONAL WILDLIFE FEDERATION

MINNESOTA ENVIRONMENTAL SCIENCES FOUNDATION, INC.



Design and Illustrations by

JAN BLYLER

Man's Habitat—The City was intended to shatter some long-held views that environmental education is suitable only "out there" somewhere—in the country, in the mountains, at the seashore—any place except in the city. Most of our environmental problems exist or start where the people are; so to exclude from environmental studies the places where we live and spend most of our time, is to misunderstand what the "environment" is.

Also, we must not expect meaningful environmental learning to focus only on the spectacular natural sights, objects, and creatures which we seldom see. People may get excited about seeing a grizzly bear, a brightly-colored bird, or the Grand Canyon; but there can also be a great fascination in less spectacular, everyday things, and man's relationship to them. As a matter of fact, when such relationships are observed and studied, they are often more exciting, and certainly more meaningful, to city residents.

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INTRODUCTION

There is a growing belief among educators that children learn best in familiar surroundings using subject materials which are well known to them. At first, the problem of meeting the city child on his own grounds may seem to be a difficult task for the teacher of ecology. The city provides few opportunities for demonstrating some of the traditional environmental problems such as forest management, crop destruction by erosion, or wildlife management.

This does not mean, however, that the city has nothing to teach us about the environment; it's just that we must develop new approaches. How do we communicate with the urban child? We start at the **place** where the child **is.** We help him actively investigate, discover, and relate to his habitat, the city. This approach demands that we begin seeing the city in a positive way, not for what it lacks, but rather for what it offers as an outdoor classroom.

This unit on man's habitat offers some new views of the city. It gives the city child a chance to understand ecology without ignoring the apparent influence of man. The suggested activities are intended to help instill this feeling for ecology by involving the children with the study of their own immediate environment. Since ecology is the relationship of all living things to each other and to their environment, it includes man and his impact upon the earth. In guiding the children through these studies, we will need to break down the artificial barriers that have been erected between natural science, mathematics, social studies, and economics. For man, ecology encompasses all of these disciplines.

MATERIALS

old photographs of the school site and neighborhood (optional)

camera (optional)

film

street map

ditto master

transparencies

overhead projector, or opaque projector

butcher paper or primary chart paper

crayons or colored pencils

small stickers or circles of tape

masking tape

colored marking pens for transparencies

thermofax machine (if available)

Man's Habitat—The City

ORIENTATION IN THE SCHOOL COMMUNITY

The objective of this section is to help the urban student.

- Become curious about his community.
- Place himself in the community by realizing he is a part of it.
- Discover the components of his school-community.
- Identify his world within this community.

In this unit we make use of the natural curiosity many students have about their surroundings. You can initiate the activities by making a classroom display of photographs taken around the school.

I. Advance Preparations

1. For this display, collect pictures and/or take photographs of the area and landmarks immediately around your school. These should reflect aspects of the block that the school is on, and the area within a one-block circumference. Twelve well-chosen examples would be sufficient.

Suggestions and sources:

a. Old school district photographs taken when your school site was selected. The local newspaper or city hall may have some of these. The students will probably find them particularly interesting if they can compare these photos with more recent pictures taken from the same spot.

b. Take pictures yourself. Black and white shots are fine and a roll of 620 film can be purchased and processed for about $2.50. A school camera might be available for your use.

c. Pictures could include some of the following subjects:
   - *each corner of the school building*
   - *the pavement (its cracks, gutters, sewers and manholes)*
   - *the tree down the block*
   - *the railroad tracks in back*
   - *clusters of billboards and signs*
   - *closely located homes*
   - *the street*
   - *traffic signals*
   - *streetlights*
   - *traffic markings*
   - *adjacent buildings*
   - *apartments*
   - *businesses*
   - *trashcans*

2. Obtain a street map of your city or school district. The free street maps furnished by gas stations are adequate, or you could use a district map if one is available. You will want to make two transparencies of this community map for the overhead projector, a ditto master of this same map for making individual copies for the students, and one very large map for the classroom wall.

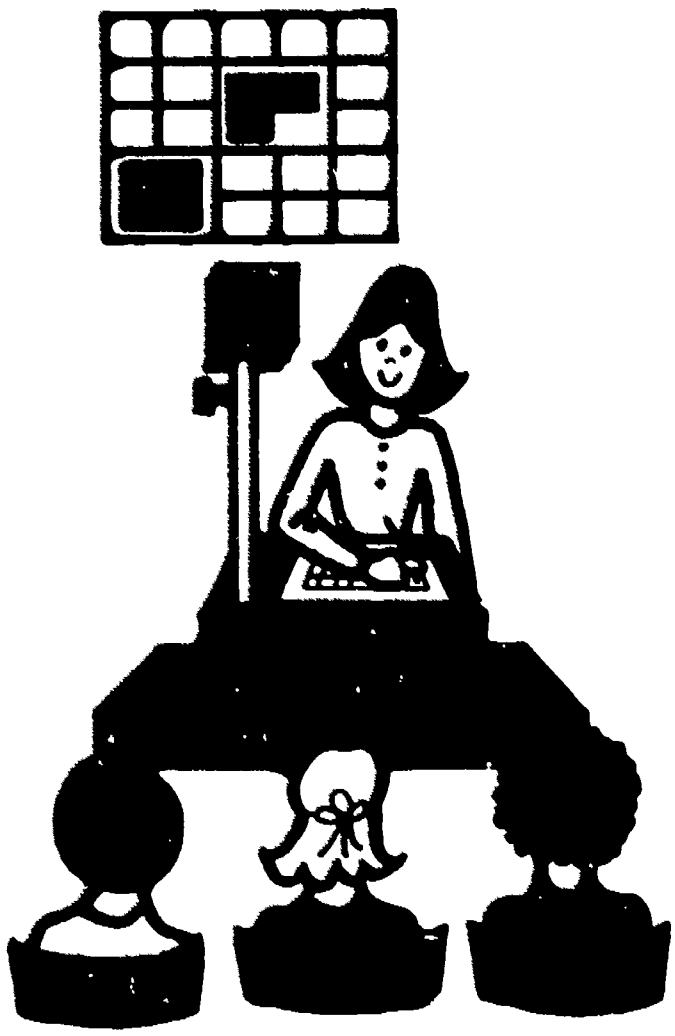
   If a thermofax machine is available, carefully trace the street patterns of your school district onto an 8½"x11" piece of paper. From this tracing, make your two transparencies. Project one transparency through the overhead projector, onto two widths of butcher paper or primary chart paper. The school should be in the center of the map, with north at the top. From the projected image, retrace your large map directly onto the chart paper. Involve the students in these preparations, especially in drawing the large map. If possible, make your ditto master directly from one of the transpar-

encies. This will make the student copies identical to the transparency you will project.

Using the ditto master, make enough individual 8½"x11" copies of the map so there will be one for each student.

If you do not have a thermofax for making transparencies and an overhead projector, an opaque projector can be used for these mapping activities. First, trace a map of the school community onto a ditto master. With the ditto master, make copies of the map for the students. Then, using the opaque projector, project one of the ditto copies onto the two widths of butcher paper and trace over the lines to make your large classroom map. For the activities calling for overlays, you can trace the outline of the ditto map directly onto a sheet of acetate.

Where there is a choice, the thermofax method will probably be preferable because it will be a little handier to use.



3. One of the activities in this section will involve taking the students for walks in the school community so that they can observe their environment. You may want to enlist the services of an aide, another teacher, or an interested parent, for assistance in keeping the group together during these walks.

II. Initiating the Unit

1. Display the group of pictures which show the area adjacent to the school. Put the display in a prominent place in the classroom.

   Use this display to arouse the curiosity of the students. Be subtle; instead of captions or explanations, present the pictures with words such as "What?" and "Where?"
2. When a student asks you about the display, be mysterious. Ask him what he thinks it is or encourage him to involve others by asking: "What does George think it is?" "Does Ralph agree with you, or does he have a different idea?"

   If a day is allowed to pass between the posting of the pictures and the group discussion, the students will probably spot some of the scenes while they are on the playground or going to and from school. Hopefully, while searching for the picture locations, they will be observing things they had never noticed before.

3. Initiate a discussion by asking of each picture, "What is it?" and "Where is it?"

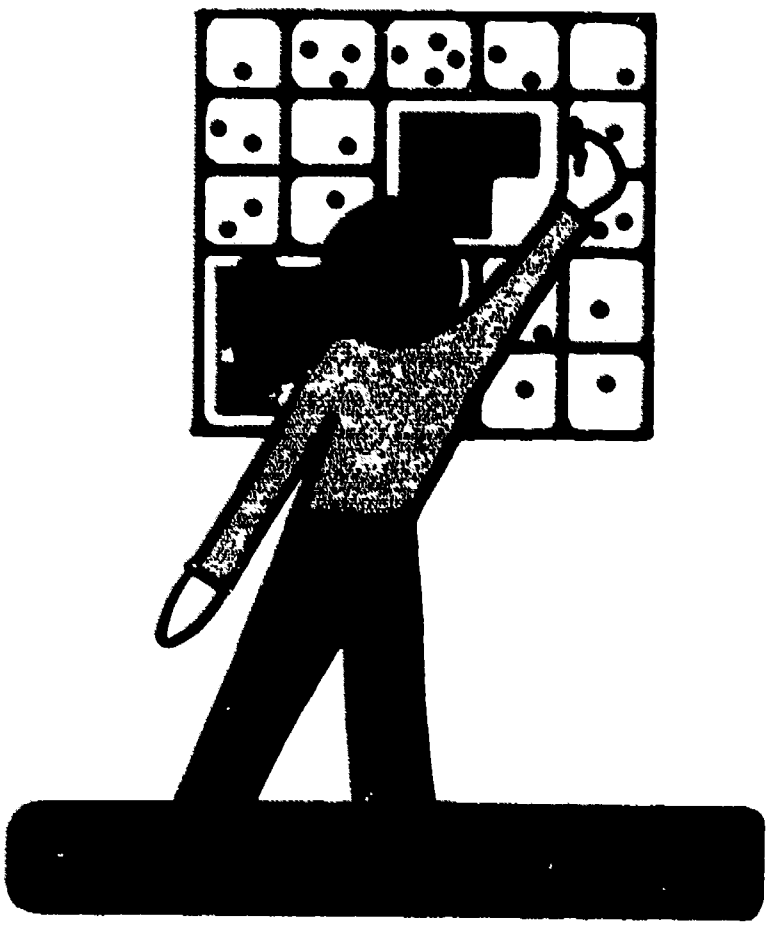
The students may debate these points and want to take a brief walk to be able to pinpoint the locations to their satisfaction. If the students do take a walk, they may want to look for changes which have occurred since the picture was taken.

If an old picture of the school site is included, you might ask the students to try to locate the point from which the picture was taken or the portion of the present school site that appears in the old photograph.

As another possibility, you might show the students an old photograph of the school without telling them where it was taken. Just ask them to find the place where the picture was snapped. By remembering the landmarks from the old photograph (street signs, background, trees, etc.), the students may be able to discover the picture's location during their walks. If they have too much trouble, you might want to tell them that it is an old photograph.

III. Placing the Class in the Community

Mount the enlarged street map on the wall for the students to observe. Using the address of each student, help him locate his home on the street map. He can put a small colored sticker or dot of colored tape where he lives.



Now determine:

- In which area do most of the students live?
- Does one area have more girls or boys, or is there no difference?
- Do more students live in apartments than in houses? (raise hands)
- Are the apartments concentrated in certain areas on the map? Can we tell where these areas are by looking at the map as it is now?
- Can we make this map **show** what the community is like? How?

Hand out the 8½"x11" dittoed copies of the wall map - one to each student. Let the class help plot the route for a walk through the community.

1. **Planning the walk**

The students will want to record on their maps the things they see and find interesting as they walk through the community. They may include things which they've noticed while driving with their families or walking to school, as well. Make suggestions of things to watch for and record on the maps. List traffic lights, apartments, houses, businesses (and types), churches, schools, cemeteries, parks, fire stations, railroads, and recreation centers.

2. **Taking a walk following the route on the maps**

Ask the students which way to turn at intersections, so that they follow the map as they go.

3. **Summarizing the data**

When they return to the classroom, the students can summarize the walk by transferring their information to the large class map. The students may want to use color coding to indicate different parts of the community, such as parks, business districts, industry, and residential areas.

4. **Discussing the data**

- The discussion of the results of the walk could revolve around the following questions:

  What things did the students discover that they didn't know were in their community?

  What areas had all of them been to before?

  Where had some students never been?

  Would they want to return to one of these places? What could they do if they went back?

  Where are the traffic signals? Why are they there?

- **Ask:** Are certain community areas distinct, or are they all mixed up?

Outline or color code areas such as the following on the large map.

industrial areas　　residential areas
stores　　parks　　apartments

Why are these areas where they are? (zoning?) Would some other arrangement be better? Why?

5. **Identifying the "kid's world" and the "adult's world."**
   - **Ask:** What places in our community are for kids?

     These places can be selected and color coded giving a map of the "kid's world." As places are being selected, give the students time to discuss **how** they could be used for various young people's activities.
   - Then ask: What places in our community are for adults?

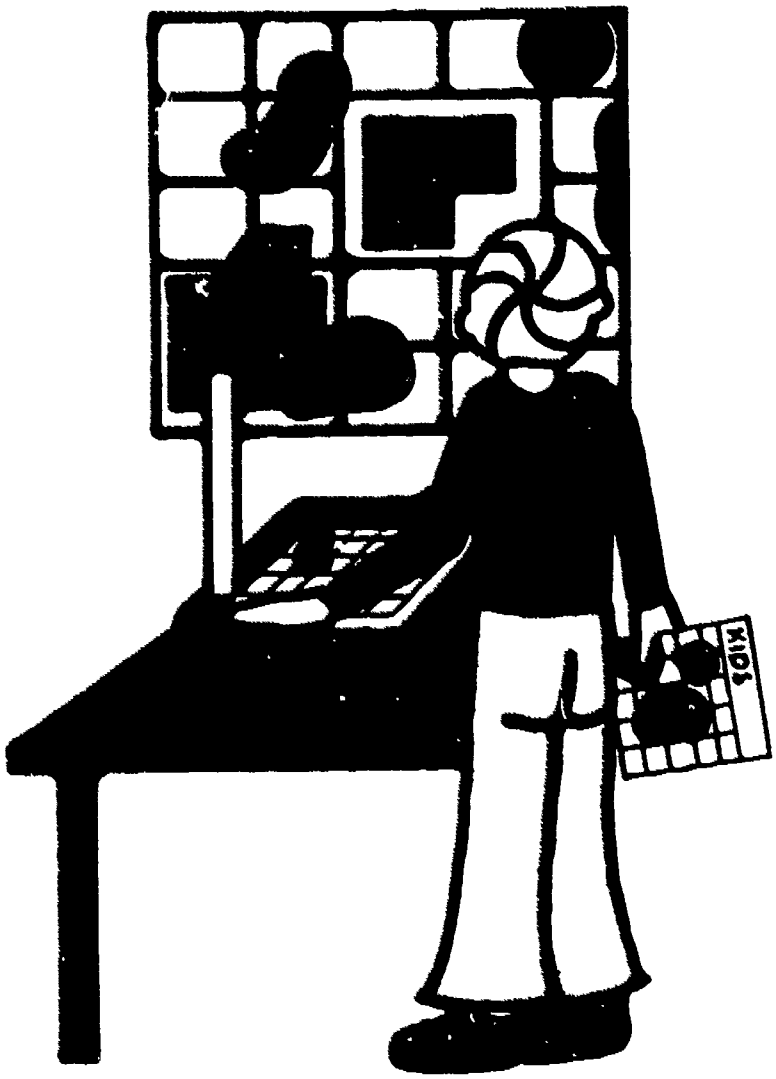
     These can also be color coded, giving a map of the "adult's world."
   - Instead of color coding these areas directly onto the wall map, you might want to make two transparencies in addition to the ones you made in the advance preparations section one for the "kids' world" and one for the "adults' world." When both transparencies are projected at the same time the students will see clearly where the two "worlds" overlap.

IV. Application—Where Would You Go?

The younger students can conclude this section with a game. Small groups could play together, or the entire class could be involved.

1. Make a list of questions and write them on separate cards.
2. After each question on the card, ask: What would be the best way to get there from your home?

   Examples:
   - Where would you go to buy some ice cream? What would be the best way to get there from your home?
   - Where could you go to play baseball? What would be the best way to get there. . .
   - Where could you get some new shoes? . . .
   - Where could you find a rat? . . .
   - Where could you mail a package? . . .
   - Where could you get help if you broke your arm? . . .
3. Have a student remove a card from a box and read the question. Then have him point out his home on the large street map and show where he would go and how he would get there.



The other students can follow his route on their maps and make suggestions on the route. Where are the crosswalks and traffic signals?

This activity can aid in map reading and in helping students become aware of services and places in the community that the students can utilize.

It would be interesting to ask a question which would require the student to answer with the name of a building or a service not found in the community. This could lead the students to a discussion of what things they still need in their environment or what things they must obtain from other communities. Examples of things needed might be a swimming pool, hospital or medical clinic, ice skating rink, playground, dentist, or restaurant.

RECOGNIZING RELATIONSHIPS

What relationships exist between parks, play areas, and places where the children live?

Are the parks in the right places?

Does the community need another park?

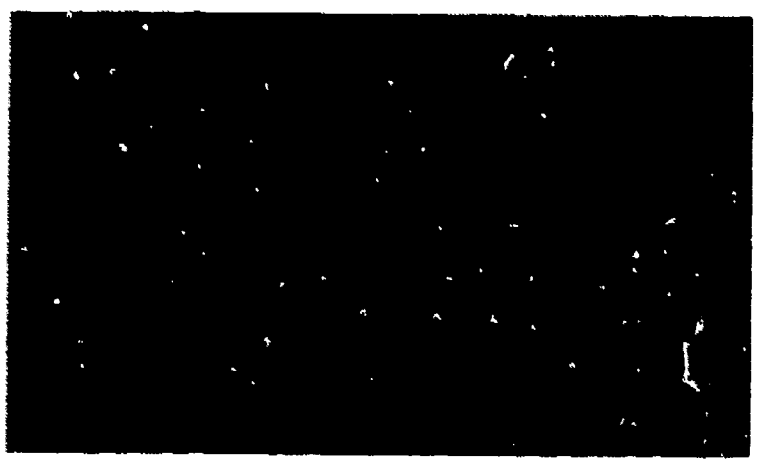
What can the class do to get the new park?

Your community may lend itself to studies suggested by the preceding questions. The problems involved are real ones, and are interesting for students to investigate.

This unit will help your class realize that community change does not occur very quickly. It may be years before a park is developed, if at all. However, if their activities actually help get a park started, the students may remember this investigation as a highlight of their school years and look at that park with pride after it has been developed.

In this section the students will:

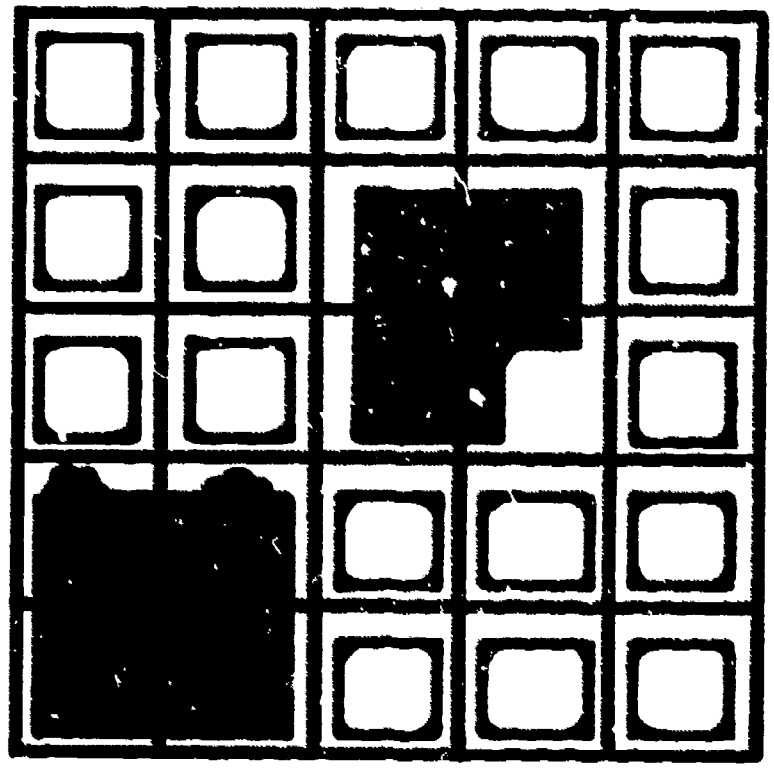
- Learn how to recognize problems in their community.
- Become concerned about the problems of their community.
- Learn how to become active in the affairs of their community.
- Learn not to be afraid of, or apathetic about, future community involvement.



(You should test the colored pencils first to make sure they work on the plastic transparencies, and that each projects its own color.)

I. Parks and Play Areas

Give each student another dittoed map of the community. This map should be run off from the same ditto made in the advance preparations section except, before making the copies, you should draw numbered grid sections on the ditto. The number of grid sections should be the same as the number of students in your class. If possible, the grid area per student should not cover more than four square blocks of your community.



Assign one grid to each student as his survey area. One way to make these assignments is to use the large wall map from the first section "Orientation in the School Community." On this large map, draw grids which correspond to those on the students' small maps. When you are assigning the sections to the students, point out one of the dots on the wall map and ask who lives there. You can then assign a numbered grid section which is near the student's home and have him survey that section. The same procedure should work in assigning most of the other grids.

Because the students live in the area, they will know about vacant lots or other spots where many children play. The students should indicate on the maps what kinds of areas these are.

The students can conduct their survey after school. You may want to send a note to their parents, explaining the study and asking for their cooperation. You might even suggest that they accompany their child on the survey.

After the students have completed their surveys, you will be ready to make use of the two transparencies which you made in the advance preparations section. If you thermofaxed these transparencies, the street lines can be colored by going over the rough side of the lines with a colored pencil (pink or purple).

When the students return with their maps, they can transfer their information to the first transparency.

Have them do this by suggesting to each student, in succession, that he place the first transparency over his individual map. Then have each student color in on the transparency any parks or play areas which he has marked on his individual map.

The color coding on the transparencies should be planned. Some suggestions are: green for parks, blue for other play areas, etc. They can use one color for parks and another color for other types of play areas, as suggested. When this transparency is complete, you can project it for the class so that it is superimposed on the wall map.

The students can discuss:

- The different types of play areas found.
- How many parks they found.
- Where the parks were located.
- The kinds of things kids could do in the parks.
- Which kinds of parks they like best.

II. Population and Distribution of Children

A youth population of your district is right in your school--so survey it there.

Assign pairs of students from your class to survey each class in your school. The students will want to list the address of every child. Make sure they include themselves on the list.

The students can make arrangements with the teachers to survey the classes. (You might warn the teachers ahead of time.) Very young children may not know their addresses. In this case the teacher might be able to supply a list.

Give the pairs of students a **second dittoed map.** The range of house numbers in each block must be included on this map. You may have already gotten these numbers for the activities in "Orientation in the School Community," or you might need to check them for yourself at this time. The dittoed map must be the same size as the map on the transparencies.

Each pair of students should then place a red dot on the dittoed map at the address of each child on their list. This does not need to be precise. If the students get the dot in the correct block the results will be adequate.

After the students have completed the dittoed map, each group can transfer its results to the **second transparency.** The house numbers do not need to be on this transparency.

This transfer can be accomplished quite simply:

1. Lay the transparency on top of the dittoed map and line up the streets as exactly as possible. Tape them together to avoid slipping.
2. Put a black dot on the transparency over every red dot on the dittoed map, until every red dot is covered. Do this for each group's map.
3. In the case of mapping in areas where there are apartment houses, especially high-rises, you might point out to the children that they will have a lot of dots within a very small area.

If the area gets too crowded, the students may want to draw in one large dot and indicate on a separate key how many children that dot represents.

When this transparency is complete, project it onto the screen for the class. Certain areas may appear with high density populations and others with low densities, or no children at all.

Ask the students to point out the high and low density areas.

Ask them why they think these areas are where they are.

If you project this transparency onto the large map made in "Orientation in the School Community," the students will probably recognize that the areas with very few children are those of business and industry, and that those with many children are residential.

Ask them which types of areas have the most children. This may or may not be clear. However, high densities may be seen in areas with apartments, medium densities in areas of houses, etc.

Now project this **second transparency** (of population distribution) back on the screen.

Place the **first transparency** (of park and play areas) over it, as an overlay.

The two maps now show a single map with both sets of data superimposed. From this the class can observe and discuss the relationships between the distribution of children and the play areas.

Discuss the following questions and any others which may arise:

- Are good play areas found near the areas where the most children live? (Let them check each high density area for play areas.)
- Are good play areas found near the areas of medium density populations?
- Are good play areas near the areas of low density populations?
- Does the community need another park?

The students could try to establish an ideal "child-to-park ratio," to determine the need for an additional park.

Where should a new park be located?

To answer this question the class should first set up some criteria for a park's location. Some of these criteria might be determined by the following considerations:

- How close should the children live to the park?
- How accessible should the park be? (The children should not need to cross any busy streets to get there.)
- What now occupies a possible park site? (Vacant lots? Parking lots? Abandoned buildings? Homes? Businesses?)
- Could an accessible area be easily changed into a park?

If the need for a park exists, have the class decide where a park should be located, considering the above factors.

The students may want to make another large map on butcher paper with these data to display in the room.

III. Follow-Up With Action

If a definite need for a park has been established, your class can become actively involved in trying to create one. The students may do the following activities:

1. See if local newspapers will print the maps and conclusions of the study.
2. Ask a member of the city park board to visit the class. Instead of asking him to give a speech, have the class prepare a presentation of the study for him. Have the students explain to him their findings and conclusions. Also, have the class make a list of specific questions to ask him. You may want to inform him of the nature of the questions ahead of time so that he can be prepared to offer pertinent data.

Some questions might be:

How does the city decide to start new parks?
About how much would a park cost?
How can the money be raised?
What can we do?
Who can help us?
How does the city decide where new parks should be located?

The class will probably want to practice its presentation before he comes. It might be presented to another class.

3. Contact civic organizations such as conservation groups, Jaycees, Kiwanis, Rotary, or garden clubs.

   These organizations may be receptive to your presentation and often can help in raising funds for projects of this type.
4. Make posters supporting a park, for display in local businesses.
5. Contact the city council. A councilman might come to your presentation and could advise you on further moves. The council might even want to see and hear your presentation and study your park plan.
6. Contact a television station. It just might be interested in a story of this type. Possibly the children could visit the TV studio, or have a television camera in the classroom.
7. Compose letters to the editor of the local newspaper.

Hopefully, some of the groups they contact will become interested in sponsoring and carrying out the project. Civic groups, especially, are apt to work with the park board for a project like this.

If the project is taken up, your class could then become involved with interviewing other children and suggesting plans for the park.

You might take the class on a trip to other parks in the city to see what things the students like or don't like about them.

The park department may have information on some new types of parks which the class could consider.

The students could build a model of the park as they think it ought to be.

Where older students are involved in studying park situations, it might be more meaningful to set the stage for their deliberations and actions by asking them to consider more comprehensive park and green space needs of the community and city. Their considerations should include, for example, more trees and vegetation and adult (as well as child) recreation needs.

IV. Other Problems To Be Investigated

A. Hazards

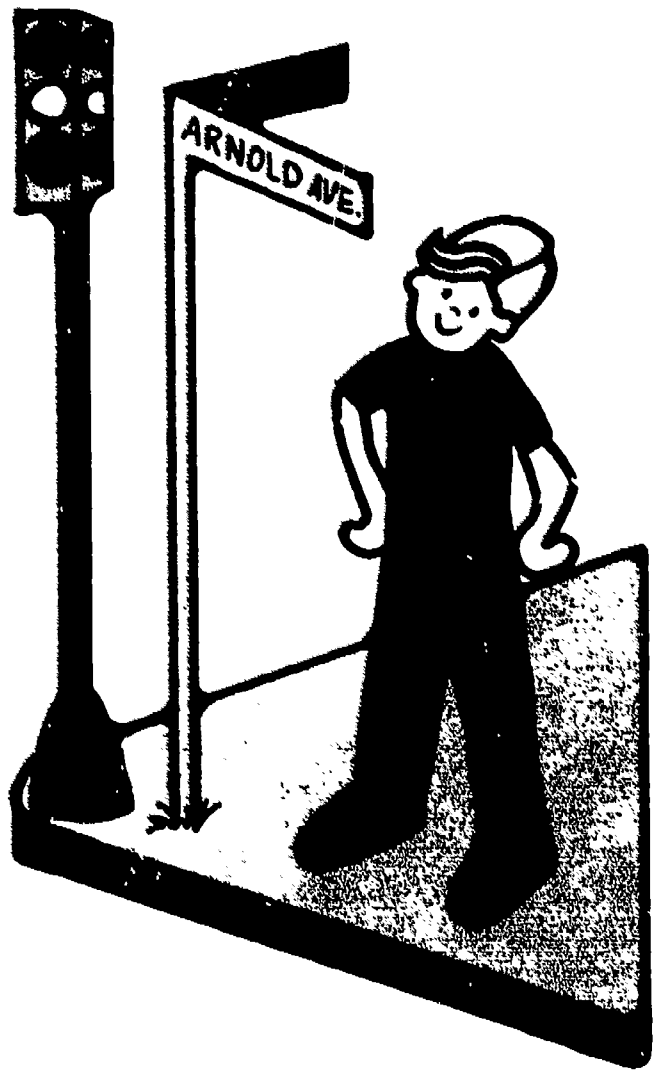
- Where are the most hazardous areas in the community?
- Should something be done about them? If so, what?
- What relationships can be found between hazards and the places where children live and play?

The students should first define what hazards are. They can then group the types of hazards into a few main categories. Each category could be recorded in one color on a **third transparency.** This transparency should then be placed over those for child population and play areas (the first and second transparencies). The survey could be done in much the same way as that of the play areas.

B. Traffic Signals

- Why are traffic signals located at certain corners and not at others?
- Does the community need traffic signals at intersections that don't have any now?
- What kinds of signals are needed? Pedestrian? Vehicle? Left turn?

The class should survey the traffic at intersections at different times of the day. How many cars go each way? When are the traffic peaks? How many pedestrians need to cross? The intersections with signals can then be compared to those without signals to determine whether additional ones are needed.



C. Transportation

Transportation systems have been and will continue to be the single greatest influence on man's environment. The environment of the city, where

most people live, is particularly affected by transportation—vehicles, roads, highways, parking spaces, railroads, canals, ships, tunnels, bridges, and the many other things relating to them.

As human populations increase, there is a growing need for ways of transporting people from one place to another. Tremendous problems exist as a result of transportation systems. These problems will grow as populations increase.

The following activities are suggested only as a beginning for many investigations which students can make in order to learn about the extent of transportation's effect upon our habitat.

ACTIVITY I—THE AUTOMOBILE

Get a city map. Establish the boundaries of the community (or the part of your city) in which students live, and mark this off on the map.

Divide the community up into sectors, and assign these sectors to teams of students. Each team should make a larger scale map of its sector.

The students should pace off distances and calculate square yards (or whatever units of measurement they want to use) which are contained in their sector.

Using the same measurement units, they should then calculate the areas devoted to auto use—roads, driveways, garages, parking spaces (don't forget gas stations), etc. Then have them calculate the percentage of sectors and total community devoted to autos.

From the city map, select other sample sectors and run sample calculations in some other parts of the city. The class should arrive at the average percentage of the entire city which is devoted to automobiles.

Discuss:

1. The magnitude of the problems related to automobiles and other transportation systems.
2. The increasing amounts of the city which will be used for autos as population grows.
3. The effects of transportation systems—air pollution, noise, decreased living space, displaced households.
4. Alternatives to autos.

Take a city map and mark off the main travel routes from residential areas to places of employment. Organize the class into teams. At key intersections during rush hours, place an observer and a recorder for each lane of traffic. These students should tally the autos and the number of people in them. Have them do this for two or three days per week in morning and afternoon traffic.

Have the class calculate the average number of people per auto.

Discuss:

1. How could the number of autos be decreased and still transport the same number of people (e.g., imposed taxes or incentives such as tolls charging $2.50 for a car with only a driver, $2.00 if there's one passenger, $1.00 of there are two passengers, and nothing at all if there are three passengers)?
2. What are the implications of the findings in regard to air pollution, space, etc.?

ACTIVITY II—PUBLIC TRANSPORTATION

Survey other transportation. Have the class get information from the city government on the percentage of people using public transportation.

The students should interview city officials about transportation plans. What steps are customarily taken to locate new roads and highways? To obtain property for roads, etc.? What provisions are made for people who must give up their homes?

What would motivate more people to use public transportation? Interview people to find this out. The class may want to use a questionnaire.

Sample questionnaire items:

1. How many cars are there in your family?
2. How often do you use public transportation?
3. Would you use public transportation if it were available and more convenient?

Students could plan and design a proposed mass public transportation system on the basis of the information gathered.

THE BACK OF THE BOOK

COMMUNITY PROFILES

a. Transects
b. Questionnaires
c. Pictures
d. Histograms

SAMPLE SURVEY SUMMARIES

COMMUNITY PROFILES

This section presents a framework for an active community investigation by the students. The studies could be focused on real problems in the community.

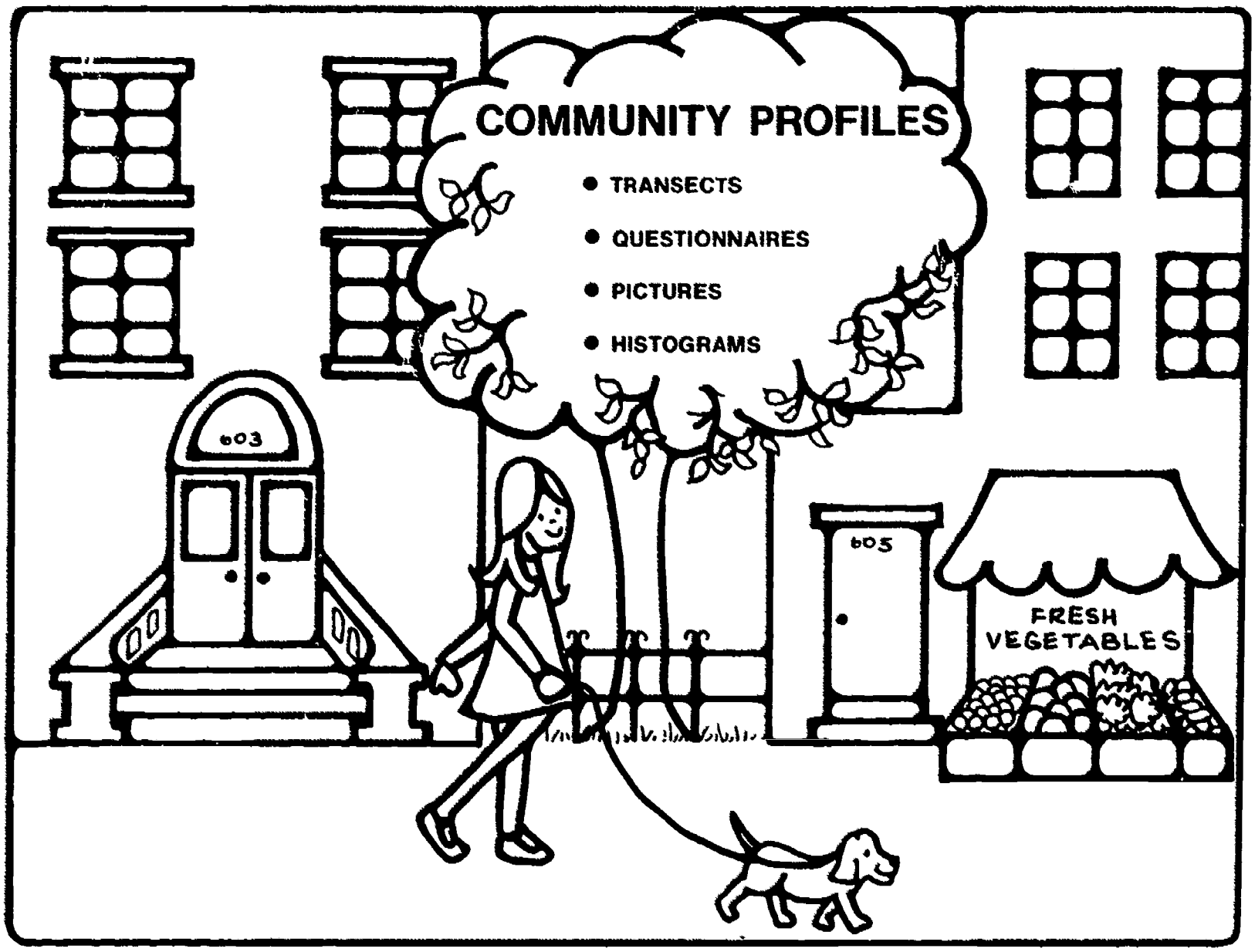
The "work sheets" on the pages that follow are written for the students. These can be duplicated and given to them as a small booklet, if you desire. The annotations on the top of each page are for your use in guiding the section. Additional information is in the back of the book.

In this section the students will learn things about the neighborhood around the school— about the people who live and work there and the types of homes and businesses they might find. To do this they will want to make a survey. But it is impractical to survey every dwelling or business in the community. Instead, they will have to take samples. The sampling method can be compared to a poll, such as the Gallup Poll and the Harris Survey, which do not contact all people but do give reliable surveys of public opinion.

Instead of surveying every home within a five-block radius of the school, the class could, for example, plot imaginary lines from the school in various directions and survey all the buildings along these lines. If the students want, they could have these lines cut across back yards and through the middle of houses. From a practical standpoint, however, this would obviously be inconvenient for the homeowners and would make the survey harder for the students. A simpler method would be to have the lines run along the streets. This way, the students could canvass the people on both sides. If they use this method, they will be doing what is called a "transect study." When the investigation is completed, they will have gained some information about various aspects of the community.

The results of the study should be displayed with maps, pictures, and colorful histograms. The students should be able to interpret these easily.

Duplicate and cut along dotted line. Use bottom half of this page as the cover for the student investigation book.



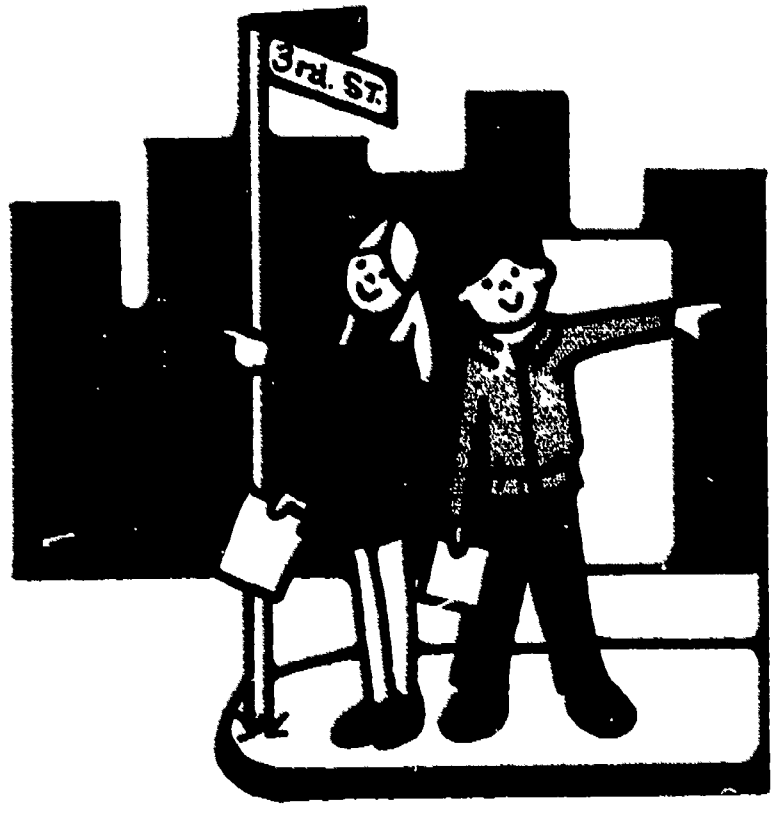
Notes to the teacher:

An enlarged street map can be used to plot the transects. The map from "Orientation in the School Community," the first section in this unit, can be used again here.

Natural boundaries such as freeways or railroad yards will help in determining the length of the transects. The four transects should be of equal length.

The team symbols can be used throughout the study to identify the work of a group.

The groups can draw maps of their transects from the large map in "Orientation in the School Community."



TRANSECTS

Cut Out a Section

Make a map of your school showing the streets surrounding it.

Plot four lines (transects) in different directions from the school.

A transect is simply a line that you use as a guide. In this case it will be a guide to help you decide where you will conduct your survey — only those houses, businesses, apartments, etc. along your transect will be surveyed by your team.

Decide how far the lines should go.

Two blocks? Five blocks?

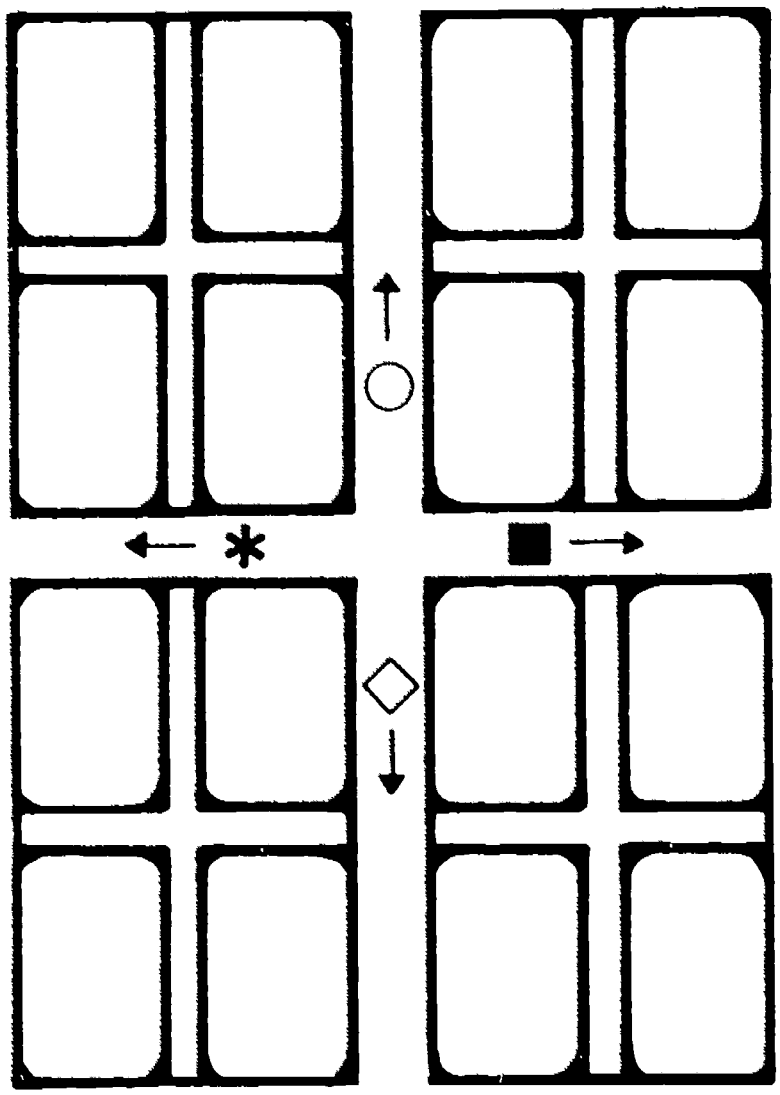
The class should divide into four teams:

North	○	East	■
South	◇	West	*

Each team can study one transect.

Make a map of your group's transect.

The map should show the street which the transect follows and all the streets that cross that transect. Put in the street names. Indicate where all the buildings are located along the transect; show whether there are houses, apartments, businesses, and so forth.



Notes to the teacher:

Help the class decide which structures in each block should be surveyed. This should be simple and easy to follow. It will be more accurate if both sides of the street are surveyed.

A block might have no structures at all. If this occurs, it should simply be recorded, and included as a block surveyed. Then the next block should be studied.

The class may want to suggest some other things they should keep in mind as they do the survey.

Plan a definite practice session. Several children could perform before the class, or each group could practice together, presenting one demonstration to the class. The children should then discuss how to react to a cranky or overly talkative person.

You can decide if appointments should be made. Children could call the persons to be interviewed using a prepared approach, but should not read over the phone.

The class is almost ready to do the survey. You will want the help of an aide, another teacher, or a parent for the actual survey. One team could go out at a time, or if four adults are available, all teams could go.

PLANNING YOUR SURVEY

You could: Survey every third structure.

or

Survey four structures in each block, at random.

Decide on the numbers and locations, making sure each team does the same thing.

Will you do both sides of the street?

Who will ask the questions at each place? You will probably want to take turns.

Keep in mind:

- How much time you will have.
- It is best **not** to enter a house.
- You are representing your school.
- People will be happier to answer your questions if you are courteous.

Practice:

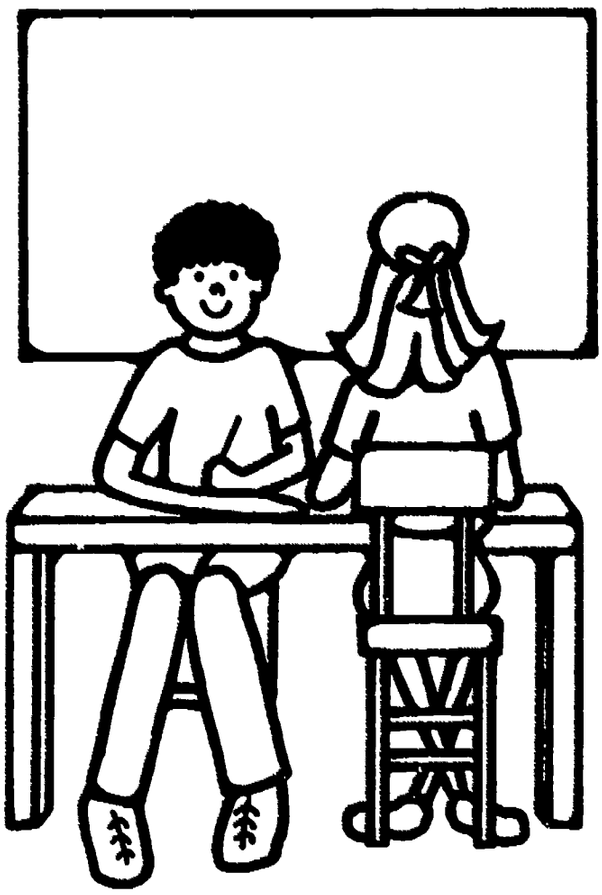
Interview your friends.

Have them pretend to be difficult or talk about things you don't ask. You can expect some people you survey to be this way!

Make appointments:

1:00—Mrs. Jones
1:15—Mr. Smith
2:00—Sally Jenson

People will appreciate choosing a time to talk with you.



Notes to the teacher:

This is the time to focus the study. What aspects of your area will be most interesting to the children? Let them select the subjects.

A general view is obtained by planning survey sheets for all of the different kinds of structures.

Or, the children could decide to survey only houses or businesses.

Examples of some things to look for:

Condition?

Age?

Method of garbage disposal?

Profit?

Loss by shoplifting? And what does this do to cost of merchandise?

Public opinions could also be surveyed. However, questions involving opinions should be ones that can be answered with a "yes," "no," or "other," so answers can easily be tabulated.

Decide what you want to find out in the survey. You can make separate survey sheets for houses, apartments, businesses, factories, and people. Some samples are included on the following pages, but you can plan your own. *Be sure* to ask questions that are easy to answer and record.

Additional survey questions and survey summaries are in the back of the book.

These samples can be used as guides for planning your survey sheets.

NOTE: See the Sample Survey Summary which is on page 25.

QUESTIONNAIRES

1. Questionnaire for Living Places

Hello, I'm _____ and I go to _____

school. My class is studying the local area and would like to ask you a few questions.

Address _____

1. How long have you lived here? _____
2. How old is this building? _____
3. How many people live in the house or apartment with you? _____
4. Do you pay rent? _____
5. Where do you buy your food? _____

   Super Valu, National, Sam's, Other
6. Where do you buy your clothes? _____

   Local shopping center, Downtown, Both, Other
7. Do you or people living here work nearby? _____
8. How has this area changed? No change, Improved, Got worse, Other _____

Thanks for helping me.

Notes to the teacher:

The questions should have definite answers. When possible, two or three choices should be offered on the survey, multiple-choice-style. These can be circled when the survey is made.

These questions can be answered without interviewing the people who live in the dwellings, if necessary.

If several students are in a group, however, one could fill out the form while the others interview the people. The students should be warned to stay **outside** the houses at all times, and remain within your view.

NOTE: See the Sample Survey Summary which is on pages 25 and 26.

II. Things to notice about a house

Address _____

1. Is it a project house? Yes No
2. Is the house in good shape?
   Good Not so good Bad
3. Does the house need painting? Yes No
4. What kind of house is it?
   Brick Stucco Wood Other
5. How good is the sidewalk going up to the house?
   No cracks Some cracks Lots of cracks
6. Are the steps in good shape?
   Good Pieces missing No steps
7. Is there junk or garbage in the yard?
   Yes No
8. How many families live there?
   1 2 More than 2

III. Things to notice about apartment buildings

Name of building _____

Address _____

1. How many floors are there? _____
2. About how many apartments are there? _____
3. Is there a parking lot for the people?
   Yes No
4. Is there air conditioning? Yes No
5. Does it have a lawn? Yes No
6. Is it a new building (10 years or under) or an old building (over 10 years)? _____

(Remember to stay outside the houses!)

Notes to the teacher:

This type of questionnaire requires an interview with the owner or manager of a store. A phone call to arrange a time for the interview would insure a pleasant reception.

NOTE: See the Sample Survey Summary which is on page 26.

VI. Things about businesses, stores, and factories

Name _____

Address _____

1. How long has this business been here?
   0-5 years 6-10 years 11-20 years 21-40 years Over 40 years
2. Is this part of a bigger company? Yes No
3. Do you sell things? Yes No
4. Do you make things? Yes No
5. Do you do things for people? Yes No
6. Do people in this area come to this store? Yes No
7. Do trains here help your business? Yes No
8. How many people work here? _____
9. Do people in this area work here? Yes No
10. About how much money is lost by shoplifting in a year? _____
11. How does shoplifting affect the prices we pay for things? Raises Lowers No effect

Notes to the teacher:

This section is optional, depending upon the availability of cameras. The school may have some. Polaroids are ideal, since they give instant results.

If only one group goes out at a time, one camera will suffice.

If the students offer to bring a camera from home, you might check with their parents for permission. One camera per group is ideal.

To insure return of the pictures, the school should supply the film and developing.

The class is now ready to go out. The number of necessary trips will depend upon the time available and the length of the transects.

PICTURES—SHOW OTHERS

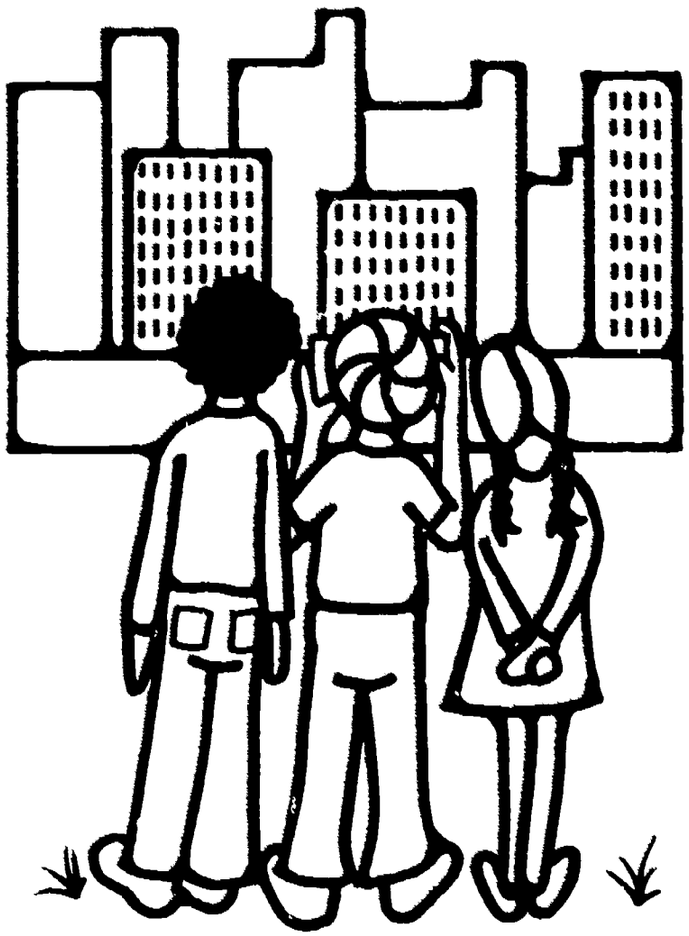
If cameras are available you can photograph the places you survey.

Practice using a camera.

Decide who will take certain pictures.

Take the picture after you talk with the people.

Keep a list of the order of the pictures in the camera as you take them. If there is any possibility of confusing one building with another, make notes to help keep the pictures and houses in order after they come back from the developer.



Picture Number	Subject	Location
1	Old house	325 Elm
2	Apartment	327 Elm
3	Garage	329 Elm
4	Old house (dog in yard)	333 Elm
5	Vacant lot	———
6	House (under construction)	347 Elm
7	Old house (for sale sign in yard)	349 Elm

Notes to the teacher:

The pictures can be grouped in ways which emphasize the aspects studied.

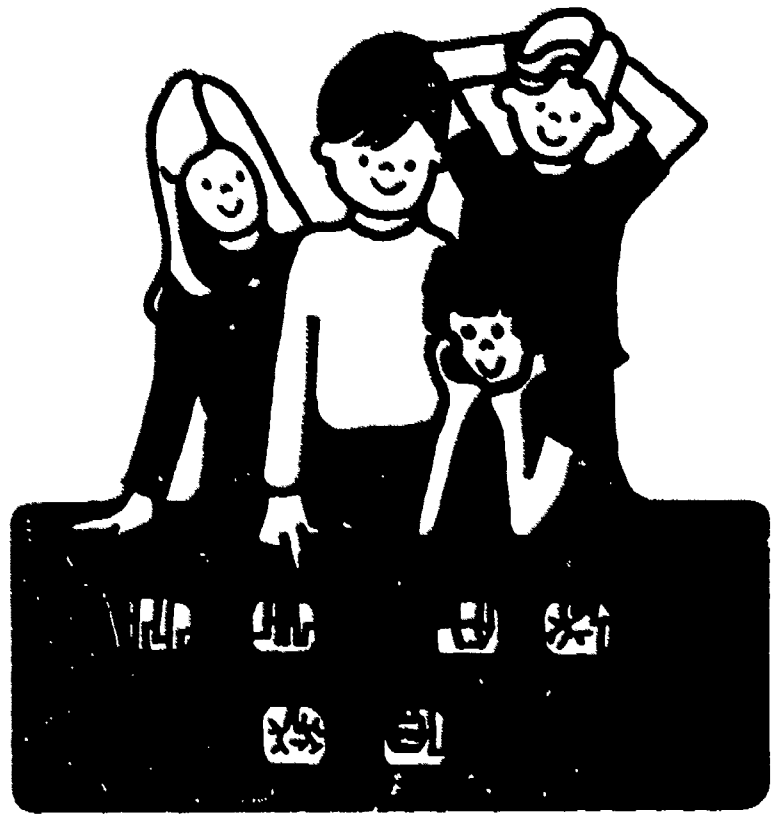
These can be done by separate groups, or the students can put their pictures together.

A group discussion can be based around the pictures.

Possible discussion questions:

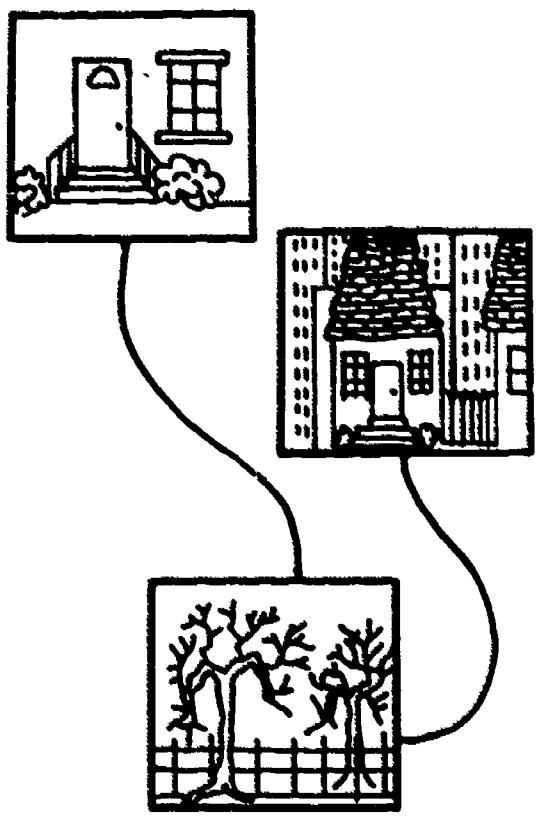
- Why are these places dangerous?
- What makes these places safe?
- What would you do to make the dangerous places safer?

You will want to develop questions which pertain directly to your specific study.



WHAT CAN YOU DO WITH THE PICTURES?

ARRANGE THEM LIKE A STRING MAP



CONTRAST THEM

old	new
big	small
safe	dangerous

GROUP THEM

- Places People Play
- Places People Live
- Places People Work
- Places People Buy Things
- Places That Help People

Notes to the teacher:

Even if you haven't made up booklets for the students, you will want them to have copies of this page and the next one. You could make a transparency of the sample histograms as a center for class discussion.

Ask the students to interpret the samples, and explain **why** they give the answers they do.

Example:

"The answer is (b) because the biggest bar is for the people who have lived here a long time."

"It isn't (a) because the smallest bar is for the new people."

Point out the scale on the left of the histogram and explain what it means.

You may also want to help them with the key.

HISTOGRAMS

1. Comparing length of Residence

Make histograms of the different things you surveyed that you can count.

Here is an example, but make your graphs to fit your results.

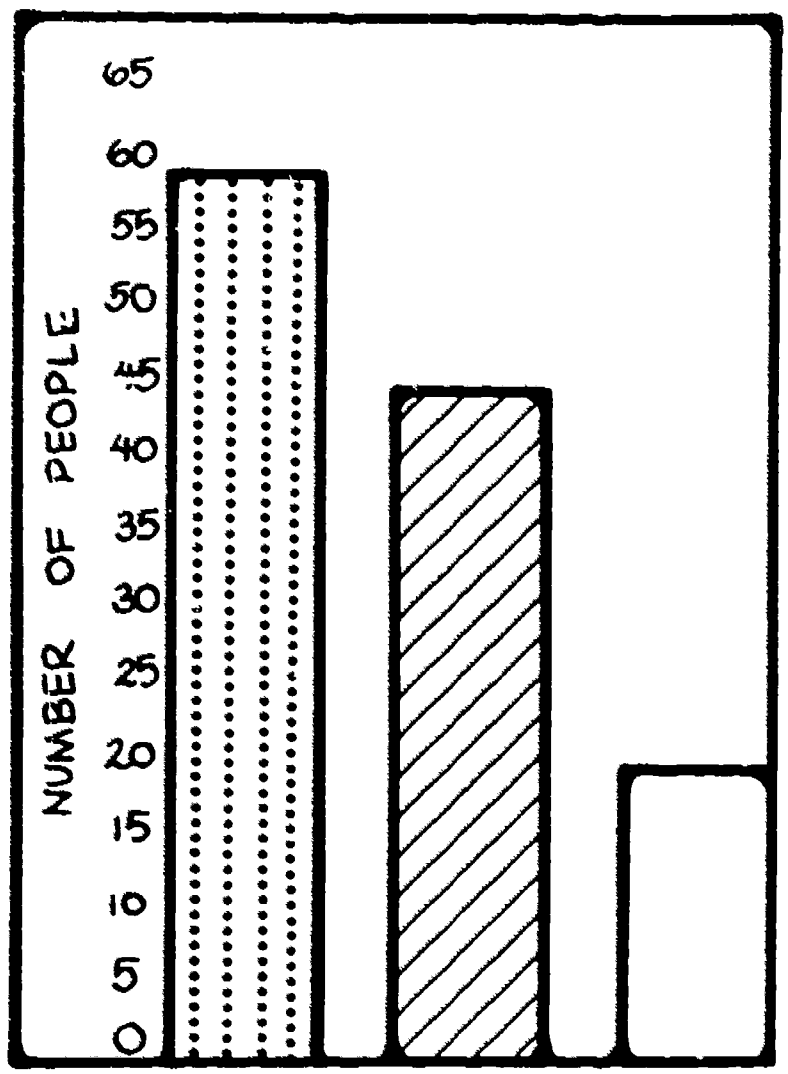
Key:

- **People living here more than 10 years**
- **People living here more than 5 years, less than 10 years**
- **People living here less than 5 years**

What does this histogram tell you?

(a) Most of the people here are new.

(b) Most of the people here have lived here a long time.



Notes to the teacher:

Point out that the scale on the left of this histogram is different and stands for a different thing.

Ask the students to interpret the key this time.

What does the dotted bar stand for?

What does the lined bar stand for?

Histograms can help in interpreting results but they do not always give clear-cut answers. This one indicates (a) and (c) but not (b). Lead the students into a debate over the "right" answer until **they** discover there is **more than one** answer. After this discussion, the various interpretations of their own histograms should become more apparent.

II. Comparing Age of Houses

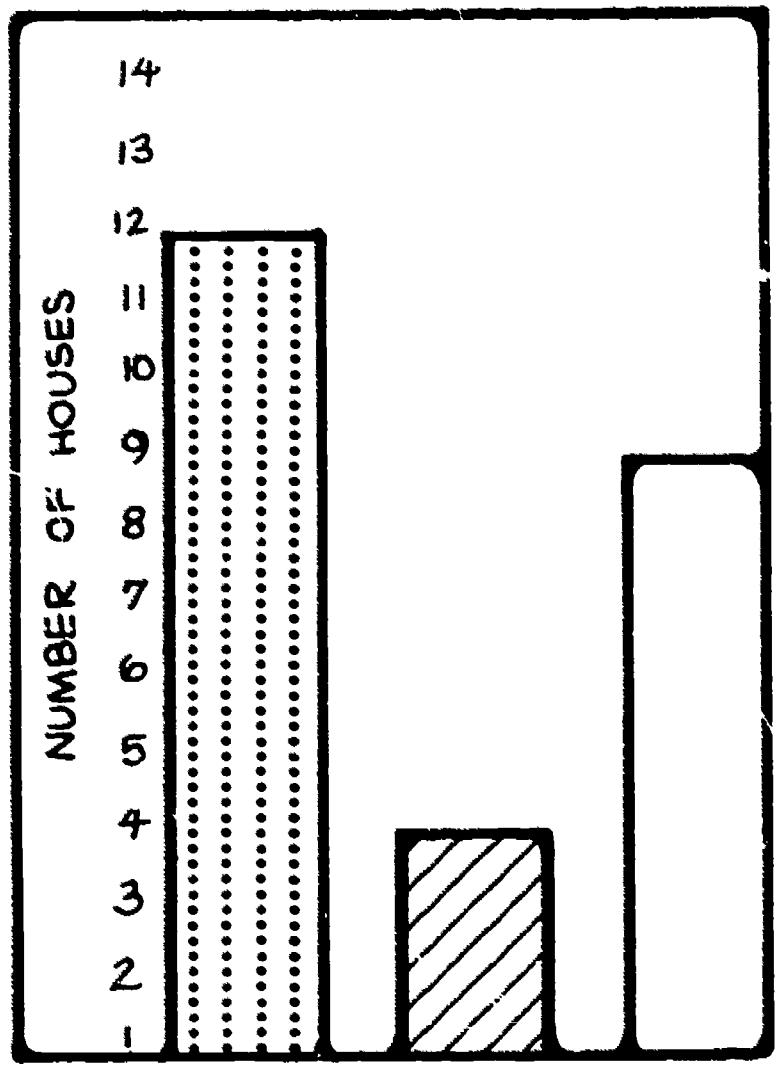
An histogram showing ages of houses can indicate at a glance how old most of the houses are along your transect. You may find that every house along your transect was built at approximately the same time. If this is the case, your histogram may have only one or two upwards columns darkened in. The houses along other transects may have a wide variety of ages and the histograms can be used to show this variety.

Key:

Houses 20 years old or more.

Houses 10 years old but less than 20 years old.

Houses less than 10 years old.



What does this histogram tell you?

(a) Most of the houses here are old.

(b) Most of the houses here were built between 10 and 20 years ago.

(c) Many new houses have been built in the last 10 years.

Notes to the teacher:

The results of the survey should be tabulated before making the histograms. The sample survey summaries in the back of the book can be used as a pattern. However, the conclusions (the summaries of data) should not be drawn until the histograms are complete.

Guide the discussion of the real histograms along the lines of the sample ones.

Write down each conclusion or interpretation. These can be attached to the bottom of each histogram.

The students will probably decide that the class histograms give a better picture of the community as a whole. However, some students will say that their section of the area was not like that, so their histogram is more accurate. Both ideas are correct. The whole is the sum of its parts, but these parts are not all alike.

III. Summary of Histograms

Decide what your histograms tell you.

Compare them with the histograms of the other groups. Do they all tell the same thing?

Get together with the other groups and make big histograms by putting your results together. What do these big histograms tell?

How do the big histograms compare with the ones made by the separate groups?

Which ones give a better picture of the whole community?

If you had done some of the same surveys 10 years ago do you think the results would be about the same? Would they be different and if so, in what ways?

Would your city government have any information that would show you what certain residential areas were like ten years ago?

Suppose you were to do similar surveys 10 years from now. Can you predict what those surveys might show? For example, are new families tending to live in your town for shorter periods of time than they used to?

Your city government might have made studies on how long individual families tend to remain in your town or city. There might also be predictions on whether present trends will tend to change in the future or remain the same. Your city hall may be able to provide you with information.

SAMPLE SURVEY SUMMARIES

I. Questionnaire For Living Places

1. How long have you lived here?
   - 0-5 years – 1
   - 6-10 years – 0
   - 11-20 years – 1
   - 21-40 years – 0
   - Over 40 years – 1

2. How old is this building?
   - 0-5 years – 0
   - 6-10 years – 1
   - 11-20 years – 0
   - 21-40 years – 0
   - Over 40 years – 2

3. How many people live in the house or apartment?
   - 1-2 – 2
   - 3-4 – 0
   - 5-6 – 1
   - 7-8 – 0
   - 9-10 – 0
   - Over 10 – 0

4. Do you pay rent?
   - Yes – 1
   - No – 2

5. Where do you buy your food?
   - Super Valu – 1
   - Sam's – 2
   - National – 0

6. Where do you buy your clothes?
   - Local shopping center – 1
   - Downtown – 2

7. Do you or people living here work nearby?
   - Yes – 2
   - No – 1

8. How has this area changed?
   - It has improved – 3
   - Old buildings have been torn down, new ones built – 0

Number of interviews: 3

Summary of Data

1. More of the people interviewed lived in the area over 10 years than under 10 years. More lived in homes which are over 40 years old than in ones under 40 years old.
2. There are up to six people living in one place.
3. More of the people interviewed work in the area than outside the area.
4. All people felt that the neighborhood has improved.
5. We did not interview enough people to be able to get any broad conclusions.

II. Things to Notice About a House

1. Is it a project house?
   - Yes – 4
   - No – 11

2. Is the house in good shape?
   - Good – 11
   - Not so good – 3
   - Bad – 1

3. Does the house need painting?
   - Yes – 6
   - No – 9

4. What kind of house is it?
   - Brick – 4
   - Stucco – 4
   - Wood – 5
   - Other – 2

5. How good is the sidewalk going to the house?
   - No cracks – 9
   - Some cracks – 4
   - Lots of cracks – 2

6. Are the steps in good shape?
   - Good – 9
   - Pieces missing – 4
   - No steps – 2

7. Is there junk or garbage in the yard?
   - Yes – 1
   - No – 14

8. How many families live there?
   - 1 – 4
   - 2 – 10
   - More than 2 – 1

Number of houses studied: 15

Summary of Data

1. Most of the houses studied are kept repaired.
2. Most of the houses studied have two families living in them.

III. Things to Notice About Apartment Buildings

1. How many floors are there?

1	0
2	5
3	7
4	1
Over 4	0

2. How many apartments are there in the building?

1-4	4
5-9	0
10-14	0
15-19	1
20 or more	8

3. Is there a parking lot?

Yes	10
No	3

4. Is there air conditioning?

Yes	9
No	4

5. Does it have a lawn?

Yes	13
No	0

6. Is it a new or old building?

New	11
Old	2

Number of apartments studied: 13

Summary of Data

1. Most of the apartments studied have two or three floors. Most have over 20 apartments in each building.
2. Most buildings have parking lots.
3. There are more new buildings than old.

IV. Things to Notice About Businesses, Stores, and Factories

1. How long has this business been here?

0-5 years	2
6-10 years	4
11-20 years	3
21-40 years	1
Over 40 years	1

2. Is this part of a bigger company?

Yes	3
No	8

3. Do you sell things?

Yes	9
No	2

4. Do you make things?

Yes	9
No	2

5. Do you do things for people?

Yes	9
No	2

6. Do people in this area come to this store?

Yes	10
No	1

7. Do trains here help your business?

No data

8. About how many people work here?

0- 5	7
6-10	2
11-20	2
21-40	0
Over 40	0

9. Do people in this area work here?

Yes	8
No	3

Number of businesses studied: 11

Summary of Data

1. Most of the businesses studied are under 40 years old.
2. Most of the businesses are locally owned and sell things.
3. Most of the businesses manufacture things.

V. Other Survey Suggestions

Survey of Businesses

Types of Firms

Personal Services
: Beauty parlors, barbers, cleaners, shoe repairs

Food and Beverage Goods
: Groceries, meats, bakeries, liquor

Personal Goods
: Drugs, clothing, variety, jewelry, etc.

Auto Services
: Gas stations, auto repairs, etc.

Household Services
: Radio-TV repair, upholsterers, rug cleaners, etc.

Professional Services
Doctors, dentists, chiropractors, lawyers
Household Goods
Hardware, furniture, appliances, etc.

Dollar Volume of Business	Number of Employees
$10,000 or less	1-2
$10,000-$24,999	3-4
$25,000-$49,999	5-9
$50,000 or more	10 or more

Ownership

Chain-owned
Independent—chain franchise
Independent—no chain franchise

Age of Operator	Residence of Operator
Under 25	On premises
25-34	Within 5 blocks
35-44	Within ½ mile
45-54	This city
55-59	Outside this city
60-64	
65 or more	

Years of Continuous Business

Less than 1
1-2
3-5
6-10
11-15
16-25
26-50
51 or more

Direction of Business Activity

Increasing
Decreasing
Same

Satisfaction with Present Location

Yes
No

Structural Condition of Present Location

Sound
Minor repair
Major repair
Substandard

Degree of Modernization

Degree of attractiveness
Good
Fair
Poor
Lighting
Good
Fair
Poor
Space available
Good
Fair
Poor
Stock
Good
Fair
Poor

Planning Changes in the Coming Year

None
Expand on site
New location
Modernization
Going out of business
Other

Planning Changes in the Next Five Years

None
Expand on site
New location
Modernization
Going out of business
Other

Aspects of Community Morale and Public Opinion That Could Be Surveyed*

How do you feel about this neighborhood?
Satisfied Dissatisfied Indifferent Other
Do you think this neighborhood is getting better or worse?
Better Worse Same Other responses
Are you very anxious to stay in this neighborhood, to move out, or doesn't it matter to you?
Stay Move Doesn't matter Other responses
Are you satisfied or dissatisfied with the schools here?
Satisfied Dissatisfied Other responses
Are you satisfied or dissatisfied with the parks and playgrounds in this area?
Satisfied Dissatisfied Other responses
Are you satisfied or dissatisfied with safety on the streets at night?
Satisfied Dissatisfied Other responses
Are you satisfied or dissatisfied with the race relations in this area?
Satisfied Dissatisfied Other responses

*Materials taken from Tortenson, Joel S., Nordlie, David A. and Hemmingson, A. Robert. *Summit-University Profile and Prospectus of an Inner-city Community*. Augsburg College Printing Service, 1966.

THE ENVIRONMENTAL UNITS

Below is a list of the first titles in the Environmental Discovery Series. The ones with order numbers next to them are available as of January, 1972. The others are in preparation and will be available in the coming weeks. Also, ten additional units will be announced soon.

Next to the titles, we have suggested the grades for which each is most appropriate. We emphasize that these are suggested grade levels. The teacher is encouraged to adapt the activities to a wide range of grade levels, and subject areas depending upon the interests and abilities of the students.

Order No.	Title	Grade Level	Price
79007	Plants in the Classroom	3-6	$1.50
79016	Vacant Lot Studies	5-9	1.50
79025	Differences in Living Things	4-8	1.00
79034	Shadows	1-8	1.00
79043	Wind	3-6	1.50
79052	Snow and Ice	1-6	1.50
79061	Man's Habitat—The City	4-9	1.50
79070	Fish and Water Temperature	4-9	1.50
79089	Oaks, Acorns, Climate and Squirrels	1-6	1.50
79105	Nature Hunt Spec. Ed.	K-1	1.00
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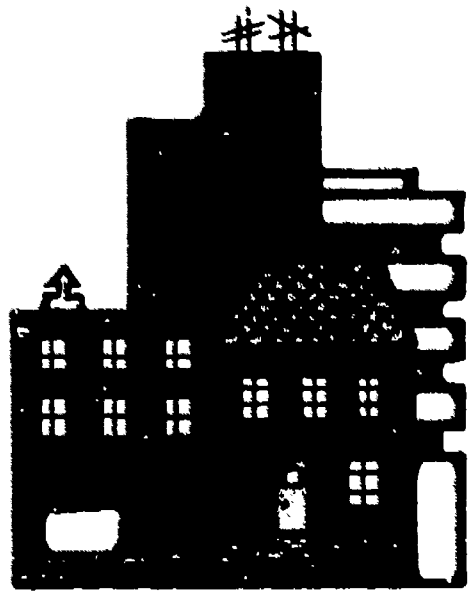

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