# Eye Opener Worksheet 6
# A New Look At A Vacant Lot

Start this trip in your classroom. Discuss a vacant lot near your school and try to reach agreement about the points listed below Record your decisions.

Is the lot regular or irregular in shape?
_____

Approximately how big is the lot? _____

The size of an average city lot?_____

_____ Half a hectare? _____ One hectare? _____ Other size?

Is the lot sloped _____ or flat? _____ Partly sloped and partly flat? _____

Are there any trees on the lot? _____ If so, how many? _____ One? _____ Two? _____ Between two and five? _____

What kind of trees are they?
_____
_

How much of the ground is bare soil? _____ Less than 50%? _____ Between 50 and 75%? _____ Between 75 and 100%? _____ 100%?

Do any animals live in the vacant lot? _____ If so, what kinds? _____

In what ways have people affected the vacant lot?
_____
_____ Litter? _____ Compacted soil at short cuts? _____ Indirect ways such as gully formation caused by water runoff from nearby paved surfaces? _____ Other ways?

Take a trip to the vacant lot to see how close your recollections were to the facts.

How is the lot shaped?

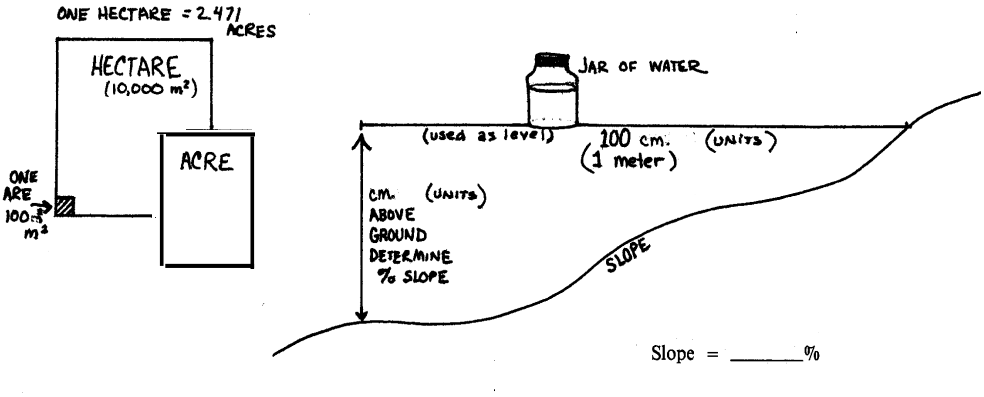
On the back of recycled paper, draw a scale map of the lot.

Use a compass to help orient the map properly.

Measure the perimeter of the vacant lot in meters.

Calculate the area in hectares.

If it is partially sloped, calculate the percentage of slope by using a measuring stick, another stick, and a baby food jar half filled with water. See diagram.




How many trees are in the vacant lot?

If you know their names list them below.

If you don't, describe them.

| Name or Description | Number |
|---|---|
| | |
| | |
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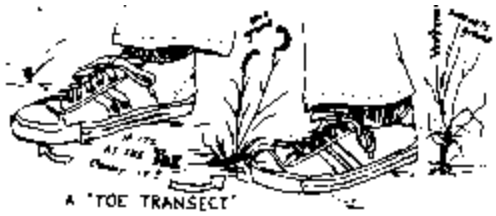
| | |
| | |

## Toe Transect Survey

Divide into groups of four. After each group selects a section of the vacant lot to study, do a 100 step Toe Transect (see below) to determine what percentage of the surface is covered by litter, annual grass,




perennial grass, forb, shrub, rock and bare soil.

Definitions

litter - plant debris on ground surface

annual grass - lives for a single year and depends on seeds for reproduction

perennial grass - lasts from year to year from the same root base

forb - wildflowers and weeds

shrub - persistent woody plant smaller than a tree

Working in groups of four, stretch a 100 foot tape along the ground where you want to inventory the types of plants in your area. This is called a 100 foot transect. Record what you find at every foot along the tape or transect on the table below. Record presence of the item below by putting a check ( ) if present. Leave blank if not present.

*

* Reprinted from *Pocketbook for Environmental Awareness: People & Natural Resources.* Youth Conservation Corps. Washington, Forest Service, United States Department of Agriculture.

Did you find animal life in the places you expected to? _____ If not, explain. _____
_____

What other signs of animals did you see which did not appear in the hoop sample?
_____

Which animals were most prevalent? _____ Least? _____
Can you explain why? _____

Study one of the animals you see.

What is it?

What does it eat?

What eats it?

How does it protect itself?

How does it move?

Does it make any sound?

What is special about its appearance? Draw a picture of this animal. If it is small, use a magnifying glass to see it better.

# Worksheet Summary

In what ways have people affected the vacant lot?
_____
How well did your recollection of the vacant lot compare with your findings? _____
_____

Name one thing in the lot, or about the lot, that you like the most. _____
_____

Why do you like it? _____
Name one thing in the lot, or about the lot, that you like the least. _____
_____

Why do you dislike it? _____
Answer the following questions based upon the information recorded in the Toe Transect survey.
Which items had the greatest percentage of coverage?
_____

Which had the least?

_____

Did certain plants tend to be associated with certain types of areas such as bare places, rocks, shrubs, etc.? If so, which?

_____

How might this be explained? _____

Which of these areas might make the best habitat for animal life? _____

Why?

_____

What kinds of human litter did you find?

_____

Where was most of it? _____

Use hoops made from wire coat hangers or hula hoops to do an animal survey. Each group should randomly toss its hoop five times. Examining the area circumscribed by the hoop each time, record your findings below. Some examples are already listed. Compile the findings of all groups.

| **Animals Seen** | **Animal Signs Seen** | **Number of signs per toss 1 2 3 4 5** | **Total for 5 tosses** |
|---|---|---|---|
| Ant | | 8 0 2 10 0 | 20 |
| Beetle | | 1 2 0 0 1 | 4 |
| | dog's paw print | 0 1 1 1 1 | 3 |
| | | | |
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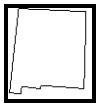
# Eye Opener Activities 6



## School Route Maps

Map your route to school from memory, then from observation. Compare the two.

What was remembered most easily? Why? What was left out? Why?

## String Circle Environments

Using string circles, capture an environment. Repeat in a variety of areas, lawn, eroded soil, vacant lot, etc.

What communities do you see? Whose shelters and food supplies are included? What organisms are the food producers? The primary consumers? The secondary consumers? The decomposers? Which organisms are more numerous, primary or secondary consumers? Why?

How many circles might it take to support an insect? A bird? A large herbivore? A large predator?

What role does the sun play in the energy transfers in these food webs?

How many life support systems, like food production, storage, waste disposal, water, etc., can you see functioning? If you were to try to diagram these systems, would it be better to use a vertical flow chart or a web of interrelated cycles? Why?

## Small Animal Survival

Select an environment outside, imagining yourself to be variously the size of a lizard, an ant, and a dog. Working in small groups, try to figure out how you might survive in that environment.

What kinds of shelters might you have? Tools? Clothing? Food? Modes of transportation?

## Adaptation of a New Animal, Plant & Prey-Predator Relations

Invent adaptation by designing a creature to replace an actual animal., like an insect, bird, reptile, or mammal, you might find on the grounds near your school or a nearby vacant lot. Keep in mind food supply, shelter, enemies, mobility. Draw, paint, or fashion in clay or wire sculpture the animal you invented.

How does this creature compare with the one it was to replace?

Can you design a predator to eat the creature you made?

Invent adaptation by designing a plant to replace an actual plant found in a vacant lot. Include seed and seed dispersal; water needs; flower; protective devices.

What *niche* (or role) might this plant fill?

Would the seed travel by air, water, in birds, or in animal fur?

Invent prey-predator relations by designing a predator capable of digging up roots; catching flying insects; picking up an egg; picking up leaves; eating meat; getting animals from underground.

What kinds of animals might be able to escape from one of the predators you designed?

What are some of the defenses they would need to protect them from their predators?

## Food Chain

Construct a vacant lot food chain using the domestic cat as top consumer.

How would the chain differ if the cat's prey was, in turn, a mouse, a butterfly, and a lizard?

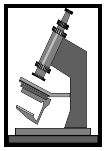
How might this chain look if it was drawn as a pyramid of numbers?

## Plant Inventory

Inventory the plants in a specified section of the schoolyard or vacant lot.

What plants are dominant?

How are these plants especially well-adapted to the biotic and cultural conditions in the schoolyard?



## Ant Watch

Watch ants carrying food to their nests, or lift up a rock to see what the ants do when their nest is disturbed.

From what can be observed, why are ants called social insects?

What do ants carry into the nest? Do they carry anything out? If so, what? Why? What do they do with it?

What subsistence systems do ant colonies have?

Show the size of an ant. _____

Show the size of the largest load it can carry. _____

## A Discard Collection

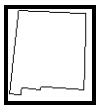
Collect nature's discards, like egg shells, feathers, fallen leaves, molted skins, grass clippings, etc. If possible, obtain permission to set up a compost pile in an out-of-the-way place outside the classroom. Otherwise, make a mini-compost pile in a moist classroom terrarium.

What changes occur in the materials (appearances, temperature, texture, odor)?

What causes decay?

What are the best conditions to bring about decay?

How can this compost system be used to demonstrate nature's recycling process?



## Role Play Land Use

Go outside and make a map of a nearby nonresidential street containing a vacant lot. Have them select *roles* (realtor, small business owner, member of planning commissions, city counselor or county commissioner, young child, teenager, parent of young child, senior citizen, social worker, developer, teacher, etc.) and role-play to decide how this parcel of land should be used.

What are the present zoning regulations for the area? Can zoning be changed? How?

Are multiple uses possible? If so, which?

Who has the final say about how the land is to be used?

What kind of environmental impact would the different suggested uses have?

# Additional Activities

## Limiting Factors of School Grounds

Identify the limiting factors on your school grounds. Design plants and animals that could survive under conditions in which the quality or amount of one of these factors was unfavorable.

What are the roles of soil quality, sunlight, temperature, availability of water and space in determining the kinds and numbers of organisms that can survive in a given environment?

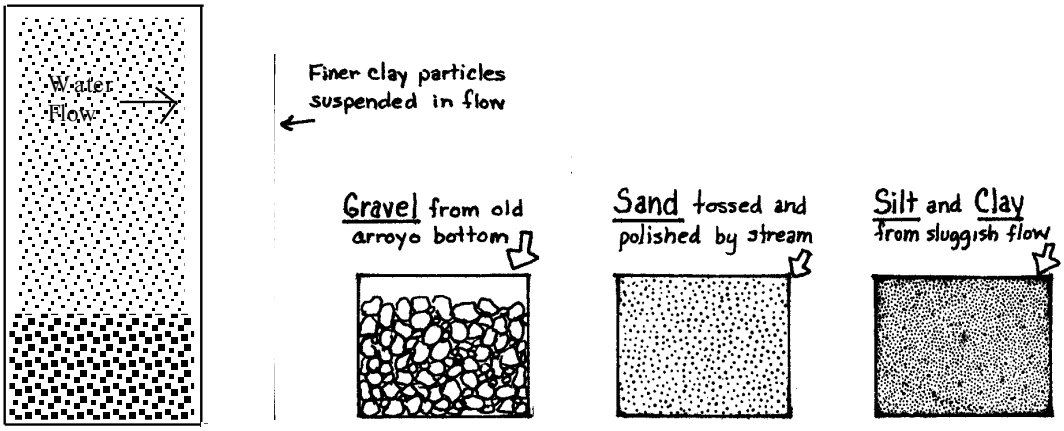
What adaptations enable plants and animals to survive in high temperatures? What relationships might exist between an organism's body surface area and the climate? Can you give examples of this relationship?

## Soil Sample

Examine a sample of soil from your yard. (See illustration below and on the next page for a comparison of mountain soils and soils found in the city.) Trade a bucket of your soil for some soil from a school or home in a different part of the city (Valley, Mesa, Heights, Mountain). Compare color, texture, porosity, and composition.

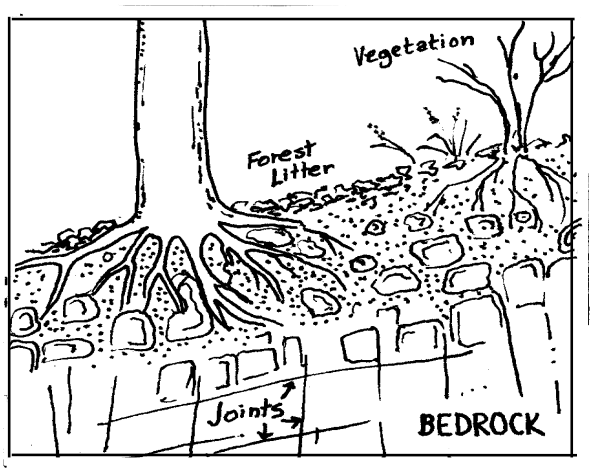
**In the City**

Soils are composed of transported particles, mostly water deposited.




Heavier particles settle out, roll along intermittently ...

**In the Mountains**
Creation of soil from Jointed Bedrock

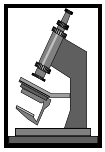



What differences do you notice? What accounts for these differences? How were these soils formed?

How can these differences explain such things as water retention, erosion, flooding, and gardening value?

How does your soil compare with potting soil? Set up a seed germinating experiment using several types of soil.

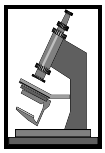
Why might some plants be better able to live in poor soil than other plants?



## Change Observation Chart

Observe one small area outside the school for three days. Record the changes and their causes on a chart. Repeat this throughout the year to note seasonal changes.

| **Change** | **Cause** | | | | | |
|---|---|---|---|---|---|---|
| | **seasons** | **weather** | **time** | **oxidation** | **people** | **other** |
| **melting ice** | | | | | | |
| **taller grass** | | | | | | |
| **rusting** | | | | | | |
| **etc.** | | | | | | |



## Seed Count

In spring or fall, count the number of seeds from a schoolyard tree which have fallen on one square meter of ground around the tree.

How many square meters are covered by seeds from this tree?

Approximately how many seeds came from this one tree?

What would the schoolyard look like if all these seeds germinated?

Why do so few produce trees?

What is a population explosion? What happens in human communities when there is a population explosion?

## School Grounds Utilization Research

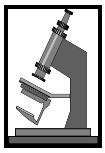
Conduct research to find out how the utilization of school grounds is determined.

Are there laws which establish minimum size of playgrounds?

How can community groups express their views about how school grounds should be utilized?

How can your class obtain permission to plant a small garden on the school grounds?

What factors would you consider before deciding what and how to plant?



## Dust Accumulation

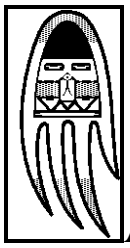
Place a little Vaseline on an index card. Lay the card near an open window. Examine it at the end of the day. Repeat this on windy days and on calm days.

Has much dust collected on the Vaseline? Is there a noticeable difference between a windy day and a calm day?

Are there unpaved roads in your vicinity? Arroyos? Vacant lots?

If there are unpaved roads, what is being done about getting them paved?

What part does dust play in causing air pollution in Albuquerque?



# Activities for the Senses and Sensibilities

## Blindfold Walk

Blindfold a partner and lead him or her on a 5-minute walk around the playground. No talking. Each partner lists impressions. After both have finished, exchange lists. Repeat without blindfolds and with talking permitted.

How do the lists compare?

What might explain the differences between the lists?

## Sense of Senses

Find out how much can be learned by using one sense at a time. Identify objects in a box by using sound, touch, and smell.

Identify foods through taste with nose and eyes closed.

Was any one sense easier to use than the others?

Did you find that there were differences among you concerning which senses were most acute? Discuss.

## Twenty Questions about Spring Flowers

Heighten powers of observation and ability to communicate by making up a Twenty Questions game using spring flowers as the objects to be guessed.

Clue questions could include:

Is it on our school lawn?

Does it have a spiny stem?

Does it have five petals?

## Poetry on the Street

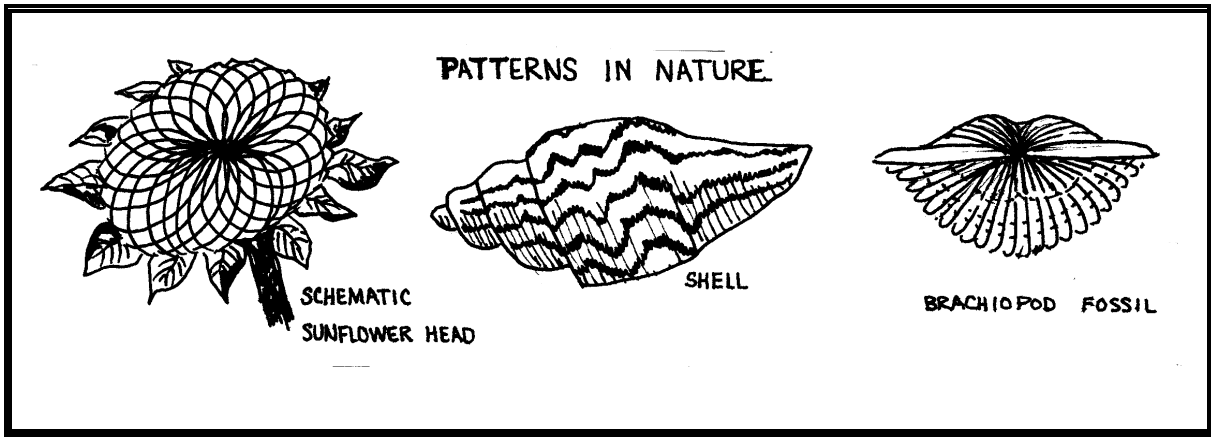
Look at a beautiful tree or a treelined street.

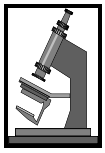
Brainstorm *feeling* words and list them (majestic, tranquil, towering, graceful, etc..).

Write Haikus or free verse using some of these words to describe your feelings about having trees around you..

## Patterns

Look for patterns in the schoolyard (spider webs, flowers, butterflies, caterpillars, soil erosion, rocks). Select a favorite pattern as a basis for designing a textile print.



## Wind Dance

0n a windy autumn day, watch the swaying trees, or leaves blowing through the air, or tumbleweeds bouncing down the street.

Identify with, and imitate, one moving object.

Choreograph a *ballet* based on movements inspired by these objects.

Select suitable music.