INTRODUCTION

These activities can be used as sponge or filler activities, preparation sets for longer lessons, an introduction to units or theme studies, or as experiences from which to write or journal. The activities have been around a long time but don't hesitate to use them. Not everyone has had the opportunity to enjoy them.

You will notice the format is different from other Investigating Your Environment activities. This is because each teacher will have to decide how and when to use these. Hopefully, you will have enough information to fit these into your lessons plans. The concepts and processes are from the National Science Teacher's Association and are replicated in the Oregon Common Curriculum Goals for Science. Listed are obvious concepts and processes which could apply to each lesson depending upon what YOU stress when you use the activity.

THE ACTIVITIES	TIME REQUIRED
Touch and Feel Hike	15 - 20 minutes
Color Hike	15 - 20 minutes
Sketching	15 - 30 minutes
Litter We Know	Each item could be done separately as a 10-minute activity, or this could be developed into an introductory unit to recycling.

Asphalt Puddles	5 - 10 minutes a day
Taking a Look at Air Pollution	10 - 30 minutes for construction depending upon amount of material present. 30 minutes to look at final result and discuss.
Mini-Forest	15 - 20 minutes
Weed Patches	20 - 30 minutes

TOUCH AND FEEL HIKE

CONCEPT Change, Interaction, Perception, Population, System

PRINCIPLE
- Most activities involved with Investigating Your Environment rely primarily on the sense of sight. This activity explores the sense of touch.

OBJECTIVE
- The student will be able to characterize the environment studied using the tactile perceptual mode.

PREPARATION

MATERIALS NEEDED:
- Paper
- Pencil
- Collection boxes (optional)

PROCESSES USED
- Classify
- Communicate
- Hypothesize
- Infer
- Observe
- Predict
- Question

TIME: 15 - 20 minutes

DOING THE ACTIVITY (outdoors)

A. Set the Stage

In this lesson, we will use our sense of smell. Some of the time, try the activities with your eyes closed.

B. Procedure

Work in pairs

1. Students are led on a walk. At intervals, give the following directions. Students should describe what they find for later use.
2. Find the hairiest leaf around.
3. Find the softest leaf.
4. Find the smoothest rock.
5. Find the roughest twig.
6. Find something cool.
7. Find something warm.
8. Find something bumpy.
9. Find something dry.
10. Think of more textures/sensations you want the student to find. Have them ready for the hike.

C. Retrieve Data

Ask students for their responses when they have completed the work. How did they feel when they did the activities with their eyes closed?

COLOR HIKE

CONCEPT Change, Interaction, Perception, System

PRINCIPLE
- Although it's the sense people use the most, we often do not "see" things very well. This activity allows participants to look with intensity.

OBJECTIVE
- The student will be able to show that all colors exist in nature.

MATERIALS NEEDED
- Pencil
- Paper
- Hailstones & Halibut Bones by Mary O'Neill (optional)

PROCESSES USED
- Classify
- Communicate
- Hypothesize
- Infer
- Observe
- Predict
- Question

TIME: 15 - 20 minutes

DOING THE ACTIVITY (outdoors)

A. Set the Stage

Take a hike with the students and look for things that are different shades of green. Discourage bringing things back, but encourage students to describe how these green things feel or what they remind them of.

B. Procedure

Work individually or in pairs.

1. Gather in one place and explore shades of green from lightest to darkest or patterns created by the greens.
2. This is also effective for yellow, pink, brown and grey. Yes, you can find lots of pink things in nature! See colors work!

C. Retrieve Data

Ask the students what they have found.

If you want to extend this activity into a poetry unit, you can have students write color images based on senses. Use O'Neill's book to help. Color images explore all the senses; i.e. Pink smells like.... you may also use the lines Pink reminds me of... or Pink makes me feel like.... to begin or end your color image.

SKETCHING

CONCEPT Evolution, Organism, Scale, System

PRINCIPLE Comparison is a very powerful learning strategy. In this activity students will use their observation powers to compare trees.

OBJECTIVE The student will be able to compare the shapes of two trees using sketching.

PREPARATION

MATERIALS NEEDED

- Pens
- Pencils
- Plain paper
- Hard surface, i.e clipboard

PROCESSES USED

- Communicate
- Define operationally
- Formulate models
- Infer
- Observe
- Question

TIME: 15 - 30 minutes depending upon purpose

DOING THE ACTIVITY (outdoors)

A. Set the Stage

We will focus our attention on trees, and looking only at their shapes, we will examine and discuss their differences.

B. Procedure

1. Find two trees with different shapes. Observe and sketch one tree at a time.
2. Look at the tree from a distance.
3. With your finger, trace in the air, the tree's shape. Do this from the ground up and then from the top down.
4. In words, describe the shape of your tree.
5. Make a telescope with your hands and look at your tree from a distance. Then make a picture frame with your hands and look at your tree.
6. Study the branches and describe how the branches go out from the trunk. Hold your arms to show how the branches branch.
7. Go closer to the tree. How does the perspective change?
8. Get close enough to examine the trunk. Look up into the tree. Describe what you see. How does your perspective change?
9. Now find a comfortable space and sketch your tree.
10. Repeat steps 2 through 9 for the second tree.
11. Teachers, use blind contour drawing if your class knows this technique or you can teach it, to enhance this lesson.
12. You can add color to the sketch by using grass or dandelion flowers as crayons. You may also sketch with charcoal from a campfire.

C. Retrieve Data

Have students share their results. Ask: What was the hardest/easiest part about sketching your trees?

LITTER WE KNOW

CONCEPT Cause/Effect, Change, Interaction, Organism, Perception, Quantification, System

PRINCIPLE Humans create litter. In this activity, students have an opportunity to analyze litter found and trace some common sources.

OBJECTIVE

- The student will be able to define and discuss where different types of litter occur.

PREPARATION Make an overhead transparency of the activity sheet.

MATERIALS NEEDED

- Tags
- Paper
- Pencil
- Litter We Know activity sheet

PROCESSES USED

- Classify
- Communicate
- Defining operationally
- Hypothesizing
- Infer
- Interpret data
- Measure observe
- Predict
- Question
- Use numbers

TIME Each item could be done separately as a 10-minute activity, or this could be developed into an introductory unit to recycling.

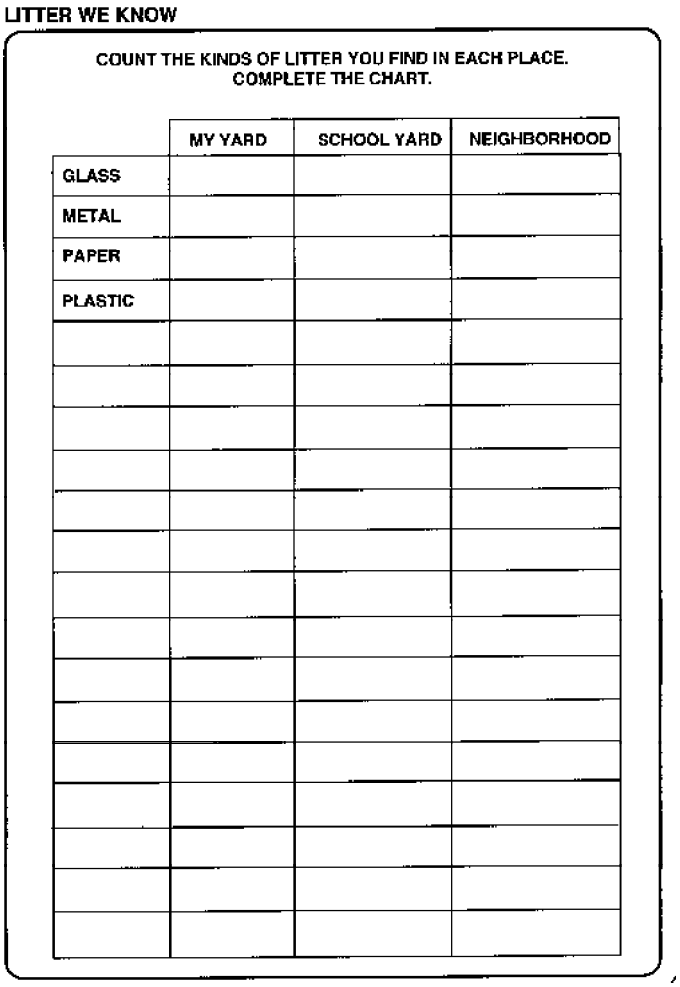
DOING THE ACTIVITY (indoors, outdoors)

A. Set the Stage

Litter is all around us. We might be surprised at what we find out about litter--where it is found and where it comes from.

B. Procedure

1. Take a walk on your schoolyard and pick up one sample of litter to bring back to the classroom to share.
2. Is this the same type of litter found in your yard at home? If it is different, discuss the differences. At this point, you may need to define litter and make a distinction between garbage type litter and naturally occurring litter. Hand out Activity Sheet.



LITTER WE KNOW

COUNT THE KINDS OF LITTER YOU FIND IN EACH PLACE.
COMPLETE THE CHART.

	MY YARD	SCHOOL YARD	NEIGHBORHOOD
GLASS			
METAL			
PAPER			
PLASTIC			

3. Count how many pieces of each different kind of litter you find on your schoolyard and keep a list, e.g. 10 pieces glass, 3 pop cans.

4. What kinds of litter did you find the most of? The least of? The class may want to graph their findings.
5. Count how many pieces of each different kind of litter you find in your yard at home and keep a list.
6. What kinds of litter did you find the most of? the least of? You may want to graph this.
7. Count how many pieces of each different kind of litter you find when walking to school, walking through the neighborhood, or waiting for the bus. Keep a list. What did you find the most of? The least of? You may want to graph.

C. Retrieve Data

Use an overhead to collect the data and make comparisons. Discuss: Where did you find the most litter? Why do you think this place had the most? Where did you find the least litter? Why do you think this place has the least? Where did you find the most metal? the most glass? the most paper? Why? Other questions will come up, perhaps, like the type of paper or metal. Pursue any questions the students want, if time and resources available. Look for litter in the classroom. What kinds of litter are here? List what you find. Is this the same type of litter as seen outside? Where does this litter come from?What do we do with this litter?How does a classroom remain litter free and clean. Where does classroom litter go? Find out if you are correct by visiting the custodian. Interview him/her about what he/she does with classroom litter? Is there any way students can help him/her with their job? What would it take to establish a recycling program in your school? Explore and find out. Report to the class. Do you want to undertake such a program?

NOTE: Can Fishing, part of the "Lakes and Ponds" unit by OBIS, looks like a fun and thought-provoking activity on just what is litter in water. It would be a good activity for a high-school biology class.

ASPHALT PUDDLES

CONCEPT Cause/Effect, Change, Cycles, Equilibrium, Interaction, Model, Quantification, Scale, Theory

PRINCIPLE Something as small as a puddle can teach us a great deal. This activity enables students to look at puddles in new ways.

OBJECTIVE The student will be able to define evaporation or contour lines.

PREPARATION Locate several puddles suitable for this activity.

MATERIALS NEEDED

- Chalk
- Paper
- Pencil
- Ruler or tape measure

PROCESSES USED

- Communicate
- Control variables
- Design experiments
- Hypothesize
- Infer
- Interpret data
- Measure
- Observe
- Predict
- Question
- Use numbers

TIME: 5 - 10 minutes a day, number of days determined by what you teach with this activity.

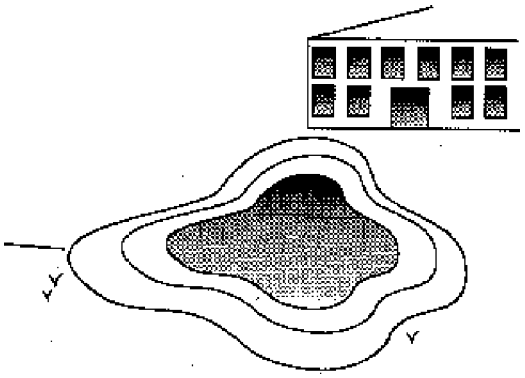
DOING THE ACTIVITY (outdoors)

A. Set the Stage

Even a simple puddle can provide us with interesting information.

B. Procedure

1. This activity can be used to introduce the principle of evaporation or of contour lines in mapping.
2. Begin this activity early in the day following a heavy rain when puddles remain on sidewalks and the playground. Try to use puddles that are fairly large and shallow. You can also dig and create puddles as needed.
3. Divide the class into groups and assign each to a puddle. Have one person draw a chalk line around the outside edge of the puddle. Students predict what will happen to the puddle throughout the day. List the predictions.
4. Later that day, observe the puddles again and answer, have the puddles changed in any way? Again, use the chalk to make the outer edge of the puddle. Ask what has happened to the water into the puddle? What will happen to this puddle eventually. At this point, you can stop if you are teaching evaporation.
5. If you are teaching contour lines, you will want to continue marking the outside edge until the puddle has almost disappeared so that you have the contour lines marked. Once you have that, use the information to introduce contour lines on maps.
6. Setting up two indoor "puddles" in pans and covering one with plastic wrap will reinforce and extend the evaporation principle. Mark the outside of the pan as water in the open pan evaporates.



C. Retrieve Data

Ask the students what they learned from this activity and where else this information might be useful.

TAKING A LOOK AT AIR POLLUTION

CONCEPT Cause/Effect, Change, Interaction, Organism

PRINCIPLE Invisible pollution is difficult to understand. This activity will make some common pollutants visible.

OBJECTIVE

- The student will be able to define pollution and discuss where some of the air pollutants come from.

PREPARATION Determine how many traps you want each student to make. Also have some ideas in mind where the traps might be placed.

MATERIALS NEEDED

- Heavy paper or cardboard
- Scissors
- Clear sticky tape
- String
- Magnifying glass
- Hand lens or microscope

PROCESSES USED

- Classify
- Communicate
- Control variables
- Hypothesize
- Infer
- Interpret data
- Observe
- Predict
- Question

TIME 10 - 30 minutes for construction depending upon amount of materials present. 30 minutes to look at final result and discuss.

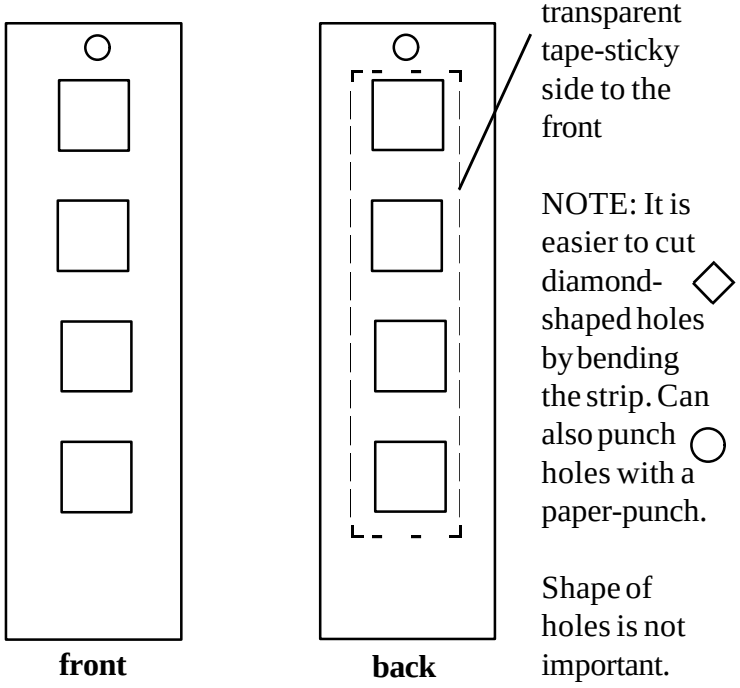
DOING THE ACTIVITY (outdoors)

A. Set the Stage

Air is made of gases which we can't see. Smoke is one type of air pollution. The purpose here is to construct traps which will enable us to see some of the particles which contribute to air pollution.

B. Procedure

1. Cut cardboard strip about 2" x 10" and then cut 3 to 4 holes in each strip. Punch a small hole in one end of the strip and tie a 12" length of string through the hole.
2. Place a long strip of tape down one side of the cardboard covering the holes so that the tape will be sticky on the underside of the holes.
3. Hang these traps by the string in different places indoors and outside. Tie them wherever you think the air might be dirty, e.g. on car bumpers, near a wood-burning stove, near a smoker's chair. Label and date each trap so results can be compared.



NOTE: Bigger traps made of clear contact film turned sticky side up and s stapled to cardboard could be made for placement in heavy traffic areas in your school.

C. Retrieve Data

1. After a week, collect all traps, and examine the trapped particles with hand lens, magnifying lens, or microscope.

2. Discussion: What do you see in the traps? What do you think got caught in the traps? Which places caught the most pollution? The least pollution? Where did the pollution that didn't get caught, go? What colors are present in the traps? Are there any parts of your body that can trap pollution? What can you do about air pollution? Who controls pollution?

Extension: Make a comparison chart or bulletin board showing the continuum of pollution from lowest to highest.

MINI-FOREST

CONCEPT Cause/Effect, Change, Cycles, Equilibrium, Evolution, Interaction Order, Organism, Population, Quantification, System

PRINCIPLES A large area of land is not needed to have a quantity of plants and animals. This activity demonstrates that small areas contain much diversity of species.

OBJECTIVE

- The student will be able to draw or describe the many different types of plants and animals that live in/on a small section of ground.

MATERIALS NEEDED

- Pencil
- Paper
- Hand lens
- String (optional)
- Coat hanger (optional) bent into a square

PROCESSES USED

- Classify
- Communicate
- Formulate models
- Hypothesize
- Infer
- Measure
- Observe
- Question

TIME: 15 - 20 minutes

DOING THE ACTIVITY (outdoors)

A. Set the Stage

We are all impressed by big trees, dense underbrush and strange plants. But we seldom take time to look at the little things underfoot. In this case, let's think small.

B. Procedure

1. Students lie face-down on the ground.
2. Students make a circle by stretching out arms in front of them.
3. At this point, they may outline the circle with string, if older, remember the parameters of their circle, or use wire hangers.
4. List at least five different plants inside the circle. Describe, draw, or name them. Do you see any animals or evidence of animals within your circle? What else is in the circle?
5. Spread the grass apart and look. Write any additional observations. Use a hand lens if you have one.

C. Retrieve Data

Discuss or write about what happened to close this activity. If you have a discussion, make sure the class comes to an understanding of the principle of community as being a place where many plants and animals live together or even a more sophisticated definition for a science class.

WEED PATCHES

CONCEPT Cause/Effect, Change, Cycles, Equilibrium, Evolution, Interaction, Organism, Perception, Population, Theory

PRINCIPLES This activity provides students with an opportunity to inventory and classify a seldom studied environment -- a weed patch.

OBJECTIVE

- The student will be able to define weed and noxious weed and view these in the context of the plant community.

PREPARATION Find a good location in or around the school yard.

MATERIALS NEEDED

- Pencil
- Data sheet for each student
- Hand lens
- Clipboard

PROCESSES USED

- Classify
- Communicate
- Hypothesize
- Infer
- Interpret data
- Observe
- Prediction
- Question

TIME 20 - 30 minutes

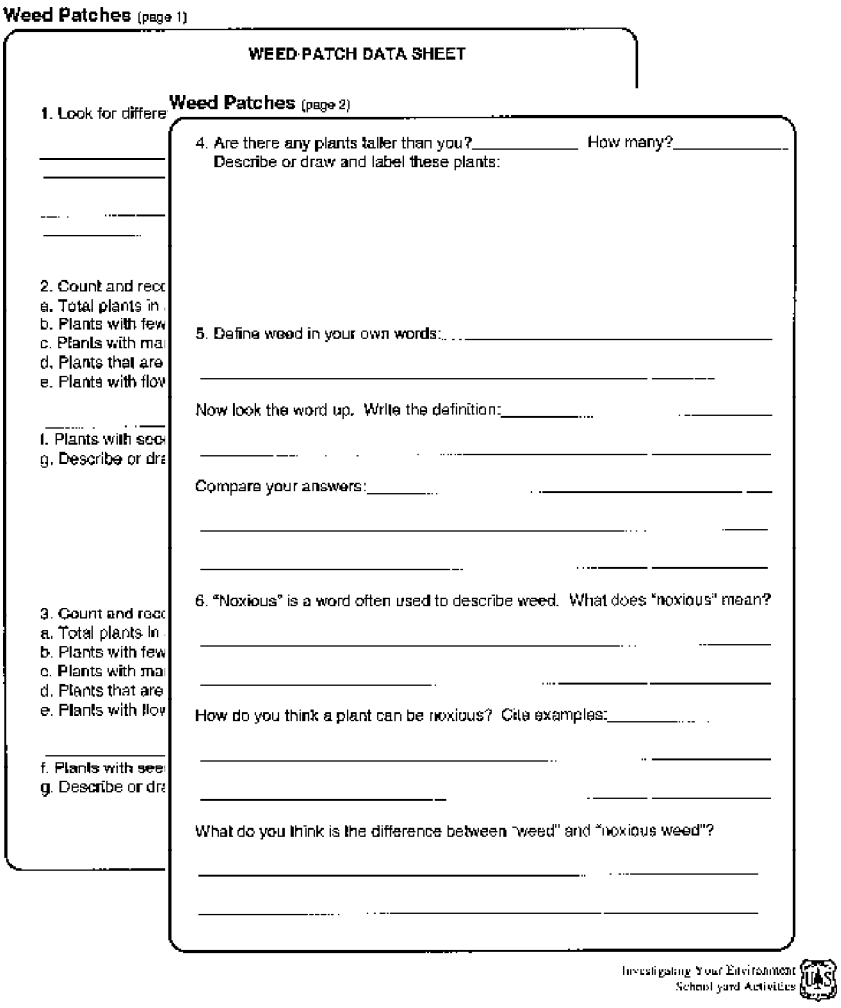
DOING THE ACTIVITY (outdoors)

A. Set the Stage

We seldom think that an abandoned field is attractive. It does, however, have some fascinating things, some of which we will look at today.

B. Procedure

1. Students take Weed Patches Data Sheet to a predetermined area and begin study. Teachers choose whether this is an individual or group activity.



Weed Patches (page 1)

WEED PATCH DATA SHEET

1. Look for differe

2. Count and reco
a. Total plants in
b. Plants with few
c. Plants with ma
d. Plants that are
e. Plants with flow

f. Plants with see
g. Describe or dra

3. Count and reco
a. Total plants in
b. Plants with few
c. Plants with ma
d. Plants that are
e. Plants with flow

f. Plants with see
g. Describe or dra

Weed Patches (page 2)

4. Are there any plants taller than you?_____ How many?_____
Describe or draw and label these plants:

5. Define weed in your own words:

Now look the word up. Write the definition:

Compare your answers:

6. "Noxious" is a word often used to describe weed. What does "noxious" mean?

How do you think a plant can be noxious? Cite examples:

What do you think is the difference between "weed" and "noxious weed"?

Investigating Your Environment
School yard Activities

2. Allow time for the study. Teacher circulates to keep students on task.

C. Retrieve Data

Ask students

1. What did you find in your weed patch?
2. What were the weeds/noxious plants?
3. What is the relationship between weeds and noxious plants?
4. What can you say about this particular area?

Extensions

Include writing riddles, sense poems, color images, haiku, cinquain, diamante, mythology, legends, tall tales, or any other form of writing. Art projects may be possible with seeds.

WEED PATCH DATA SHEET

1. Look for different colors of plants. Arrange colors from lightest to darkest.

_____ _____ _____

_____ _____ _____

2. Count and record the different plants that are below your knees.
a. Total plants in all_____
b. Plants with few leaves_____
c. Plants with many leaves_____
d. Plants with stickers_____
e. Plants with flowers_____List flower colors_____

_____
f. Plants with seeds or seed pods_____
g. Describe or draw and label the different pods:

3. Count and record the different plants that are above your knees.
a. Total plants in all_____
b. Plants with few leaves_____
c. Plants with many leaves_____
d. Plants with stickers_____
e. Plants with flowers_____List flower colors_____

_____
f. Plants with seeds or seed pods_____
g. Describe or draw and label the different pods:

Weed Patches (page 2)

4. Are there any plants taller than you?_____ How many?_____
Describe or draw and label these plants:

5. Define weed in your own words:_____

_____

Now look the word up. Write the definition:_____

_____

Compare your answers:_____

_____

_____

6. "Noxious" is a word often used to describe weed. What does "noxious" mean?__

_____

_____

How do you think a plant can be noxious? Cite examples:_____

_____

_____

What do you think is the difference between "weed" and "noxious weed"?

_____

_____

TAKING A LOOK AROUND THE SCHOOL — COMMUNITY AND CULTURE

CONCEPT: Cause/Effect, Change, Cycles, Evolution, Interaction, Perception, System

PRINCIPLE: Taking a closer look at common aspects of the community can often give new insights to that community.

OBJECTIVE:
- The students will be able to draw some conclusions about their area by analyzing their inventories.

PREPARATION: Identify an area that has some diversity--structural, geographic, etc.

PROCESS:
- Classify
- Communicate
- Formulate models
- Hypothesize
- Infer
- Interpret data
- Measure
- Observe
- Predict
- Question
- Using numbers

MATERIALS NEEDED:
- Paper
- Pencil
- Tapes
- Rulers
- Graph paper

TIME: Open-ended depending upon where teacher wants to proceed with this. Seems like it would tie well to the five themes of geography .

DOING THE ACTIVITY

A. Set Stage:

Depending upon the option, set the stage by indicating that we will look, with great detail, at some common items in our community.

B. Procedure:

Option 1. Inventory building structures within a given distance from school.

a. Develop a classification system for building types, i.e. shape, roof shape, and type, construction materials.
b. Develop a means for classifying a building's age.
c. Map vacant buildings within a given distance of your school.

1. Determine how long buildings have been vacant by consulting local residents, written records, observing deterioration.
2. What function did the building perform when it was used?
3. What caused the building to become vacant?
4. Who owns the building now? Do they have any plans for it? What could it be used for?

Option 2. Make an inventory of fences within a given distance from school.

a. 1. What types of fences were found?
b. 2. What materials are the fences made of?
c. 3. Develop a classification system for the fences observed.
d. 4. Develop a chart showing fence type correlated with its most common use.
e. 5. If possible, find pieces of discarded fences and construct a display listing uses for each.
f. 6. What new types of fencing are now available? Are there any examples of this in the neighborhood? Can you show these materials in some form?

Option 3. Locate the watershed in which your school is located. What land uses are in that watershed? Are there any conflicts of uses, needs and wants? Can you write a simulation game to help people understand the issues better?

a. Locate the source of your community's water supply. What changes have occurred in the water supply situation in your community?
b. Are there alternative sources of water supply in your community? What and where are they?
c. How is water treated in your community - before coming into your home and after leaving it?

Option 4. Draw maps of your schoolyard. Show the areas important to you, then show major routes for you away from the school to places like work, home, and friends' homes.

SOUND HIKE (ANY SENSES HIKE)

CONCEPT Change, Interaction, Perception, Population, System

PRINCIPLE Focusing on one sense heightens its sensitivity.

OBJECTIVE

- The students will be able to identify at least 6 different sounds.

PREPARATION

MATERIALS NEEDED

- Paper and pencil

PROCESSES USED:

- Classify
- Communicate
- Question
- Hypothesize
- Infer
- Observe
- Predict

TIME: 10 - 15 minutes outdoors. With some creativity, could be done indoors.

DOING THE ACTIVITY

A. Set Stage:

In this activity, we will focus on only one of our senses--hearing. By closing our eyes, we often can hear better.

B. Procedure:

1. Take students for a walk, stopping at intervals along the way. Have students close their eyes and concentrate on listening for 30 seconds.
2. They then write what they heard.
3. Repeat steps 1 and 2, stopping in different spots so varying sounds are heard.

C. Retrieve Data

1. Questions to ask or use: How many different sounds did you hear or were heard as a group? Which sound was most pleasant to you? Why? Does it remind you of something else? Which sound was the loudest, quietest, highest, lowest, least pleasant, most prevalent?

Extension

1. You may repeat this hike stressing sight, smell or any of the other senses.
2. The hike need only take 15 minutes yet several class periods of work can spin off of this.

LITTER WE KNOW

COUNT THE KINDS OF LITTER YOU FIND IN EACH PLACE.
COMPLETE THE CHART.

	MY YARD	SCHOOL YARD	NEIGHBORHOOD
GLASS			
METAL			
PAPER			
PLASTIC			