

CONTENTS

The Premise	v
A Word to the Teacher	vi
Rationale for Self- Directed Learning	1
The Format	4
Suggested Readings	5
The Interest Development Center	6
Getting Started	7
The Unit: ECOLOGY
UNIT I: Kindergarten Through Third Grades	9
Suggestions for Adapting the Unit	47
UNIT II: Grades Four through Eight	49
Bibliography	100
Exploring the Arts	105

A Word to the Teacher

The Study of ECOLOGY—Learning to Love Our Planet

Come along on an ecological journey . . . a journey that will lead you through beauty, awe, humility, and fear. Ultimately, you will grow into a kinship with the vast and largely unseen community with whom you share this earth.

The first step begins with AWARENESS . . . the developing of a keen eye and sensitivity to your surroundings, both living and non-living. From awareness springs CURIOSITY about those things that share this time and place with us . . . and about their effect on us and ours on them. Curiosity leads to EXPLORATION and EXPERIMENTATION, and from these things grows UNDERSTANDING and PERSPECTIVE.

The journey does not stop there. The ecological traveler, knowledgeable about the environment and its many fragile networks, comes to feel CONCERN and a sense of RESPONSIBILITY for its care. A nation and world of such people has little to fear.

On the most private, individual level such a journey has rich rewards. It lessens our sense of estrangement from the natural order which modern life seems to engender. It restores to us a feeling of CONNECTEDNESS . . . of belonging to the wide, yet intimate, fellowship of life that swirls around us. *Above all, there gradually grows from deep within each traveler, a sense of WONDER and AFFECTION for it all.*

It is hoped that through the pages of this packet, young persons may set out upon that journey for themselves.

Interest Development Center

Ecology

The purpose of the Interest Development Center is to stimulate interest in the topic area. The student needs time for browsing and investigation for maximum benefit.

Beginning ideas . . . you and your students will think of more . . . let parents and other teachers know about the Center and it will many times grow without effort.

Books, Posters, Magazines, Filmstrips and Charts about:

Plant and animal adaptation	Food chains
Symbiosis	Pollution:
Conservation	land, air, water
Endangered species	industrial chemicals/disposal
Natural resources	pesticides
wilderness areas, beaches	fertilizers
Life in the various ecosystems	organic wastes
Energy use and conservation	Population
Environmental awareness	City ecology and urban life
Environmental issues, concerns	Careers

Local Speakers

Officials from utilities, city planning, water departments
Environmental activists
Conservation groups
Nature museum representatives
Ecologists (geographers, biologists, urban planners, hydrologists)

Maps

Local geological, physical
Aerial photo of community (old and new)
U.S. maps of the states
Bus and bicycle path maps

Records and Tapes

Nature songs
Environmental sounds
Sounds of whales, dolphins, wolves, bird calls

Artifacts for Investigations and Experimentation

Nature items: shells, seeds, mold, fungi, small animals, insects
Jars, aquarium, screened boxes
Thermometer, light meter
Microscope, magnifying glass, binoculars
Tape recorder
Collecting bags (paper)
Solar cell
Local newspapers
Field guide to local plants and animals
Newsletters of environmental organizations
Bird call whistles

Traditional music inspired by environment:
Grand Canyon Suite (Grove)
La Mer (Debussy)
American in Paris (Gershwin) etc.



Setting The Stage . . .

LOOK AROUND YOU.

Look at the people, at the chairs, the books, the papers . . .

Imagine the tiny things you can't see . . . the bits of dust . . . the insects within the walls . . . the bacteria.

Now go to the window. Look out as far as you can see . . . at the buildings . . . the trees . . . the cars . . . the birds.

IN YOUR MIND, LOOK BEYOND WHAT YOU CAN SEE HERE . . .

Look far beyond to the countryside, with its forests and farms and lakes . . . to the ocean, with its fish and whales and microscopic sea life.

Imagine other lands . . . other peoples . . . climates . . . insects . . . animals . . . all busy with their own lives at this very moment . . . as you are.

You may feel alone, but you are part of a large community of living things. You need that community to live . . . and it needs you.

TOGETHER WE SHARE THIS EARTH . . . THIS DAY . . . AND TOMORROW . . .

IT'S TIME WE BECAME ACQUAINTED.

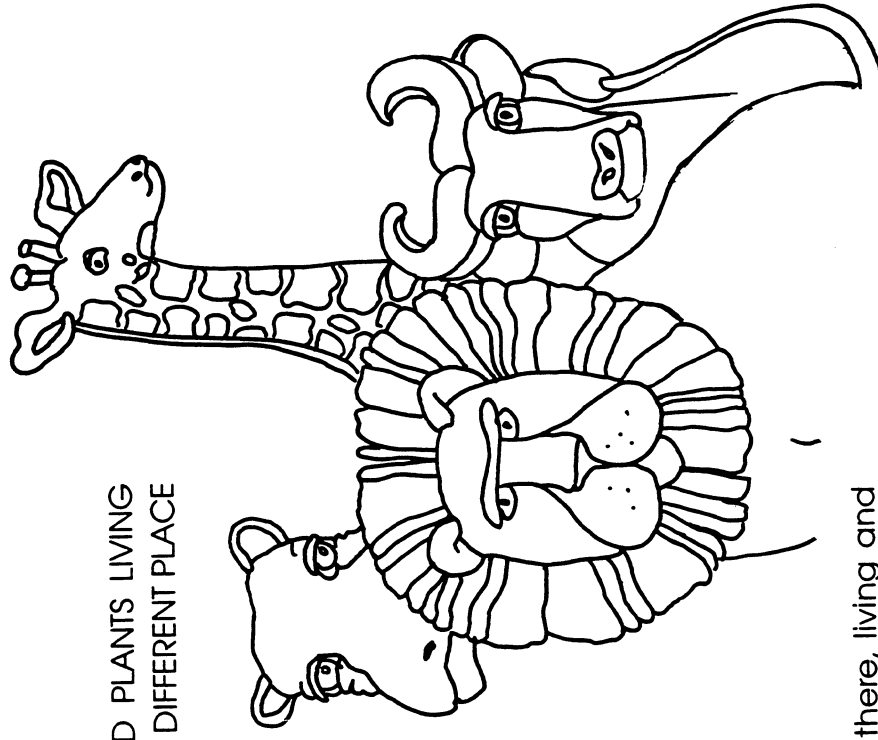
1. Ecosystems / Vocabulary

AT ANY ONE PLACE ON EARTH, YOU WILL FIND CERTAIN ANIMALS AND PLANTS LIVING TOGETHER IN A HARMONIOUS WAY. THEY ARE AT HOME THERE. LOOK AT A DIFFERENT PLACE AND YOU WILL FIND A DIFFERENT COLLECTION.

MAKE several lists of plants and animals that live together harmoniously.

As you learn about Ecology, you will get to know these words well:

ECOSYSTEM
BIOME
BIOTIC
COMMUNITY
PHYSICAL
ENVIRONMENT
HABITAT



- **CHOOSE** one **BIOME** and **LIST** the things you would expect to find there, living and non-living. **CREATE** a mural or diorama of the biome. **USE** the word list to describe creation.

2. Ecosystems / Awareness

FIRST . . .

Listen to some songs about nature and its creatures. Try, "Spin, Spider, Spin", an album of nature songs.

THEN . . .

- **PRETEND** you have become any animal. **THINK** about your life. What kind of biome do you live in? What shares it with you? What do you eat? What does your skin feel like? What should you be careful about? What do you do in the rain?

DRAW a picture of your animal home. Maybe from the inside . . . or maybe from your doorway, looking out at your neighborhood.

OR

WRITE a story about your life as an animal.

— OR —

- **DISCOVER** the coastline ecosystem. Try to find:

See Along the Shore by Millicent E. Selsam
The Beachcomber's Book by Bernice Kohn
Along the Seashore by Margaret Waring Buck

TAKE or IMAGINE an observer's walk. Go slowly, watch with keen eyes. On the way back notice things you missed the first time.

COLLECT samples of the biotic community (shells, beach plants, feathers . . .)
CREATE a collage. (Sandpaper might make a good background.)
(If your walk was imaginary, "collect" the samples from a magazine.)



"Walking on the beach
looking for perfect shells
I almost did not see
the intricate patterns
and broken beauty
of the fragments."
Sam Keen

