



METRO GREENSPACES

WATER ECOLOGY GRANT

VOLUNTEERS OF AMERICA SOUTHEAST CHILD CARE CENTER

Metro Greenspaces  
Water Ecology Grant  
VOA SECCC

In January 1994, Volunteers of America Southeast Child Care Center began work on a "water ecology curriculum" for 3 -5 year old children enrolled in our child development program. Our goals were:

1. To develop a curriculum with the following components:
  - A. To create many opportunities for children to hypothesize, experiment, observe and verify the water ecosystems that are a major part of the world they live in.
  - B. To simulate the children's natural inclinations toward scientific investigation.
  - C. To provide hands on exploration of water, its value and uses which includes field trips to many of Portland's "greenspaces".
2. To expand the competencies of those educating preschool age children in the area of science and the ecology in child care centers and other institutions serving an early childhood population.
3. To provide training concepts and activities developed through this project for teachers of young children.
4. To develop partnerships with other programs serving an early childhood population. Those we identified as partners in this project were: OMSI, Jackson Bottom Wetlands Preserve and the School of Education at PSU.

We are happy to be able to report that we were able to meet and exceed these goals. The project has extended beyond our expected dates of June - August 1994. Teacher training and extended learning continues at our program to date. We will be sharing what we have learned in our on-going journey at the Spring OAEYC (Oregon Association for the Education of Young Children) conference on April 11th. We have also applied to present at the WAEYC (Washington Association for the Education of Young Children) conference in October 1995.

The following report will provide information on the curriculum that was developed (a work still in progress), the field trips that the grant money enabled us to take, our on-going teacher training and dissemination of information, the changes the project has brought throughout our program in our daily planning and implementation, and finally, the materials and equipment that have been purchased through the grant money.

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### FIELD TRIPS

The grant from Metro allowed us to provide many field trips for the children in our program to a variety of Portland area "greenspaces". The Kindergarten group was scheduled for a field trip every week last summer. We were able to take them to many of Portland's parks as well as out of the city to Multnomah Falls, Bonneville Dam, Tryon Creek State Park and Jackson Bottom Wetlands. The schedule of their field trips is attached.

The three year old room went on two field trips this summer, In June they went to the Children's Museum where there is a water play room. In August the children went downtown to the Salmon Street Fountain, played in the water and had a picnic. In October this group went out to Jackson Bottom Wetlands. In the report you will find two "daily go home" sheets that explain the children's experiences at the Wetlands.

The four and five year olds went to Jackson Bottom Wetlands in July. They explored the wetlands with a guide who took them on a trail through the preserve. The children looked for evidence of animals, saw bird houses, trees, plants and rivers.

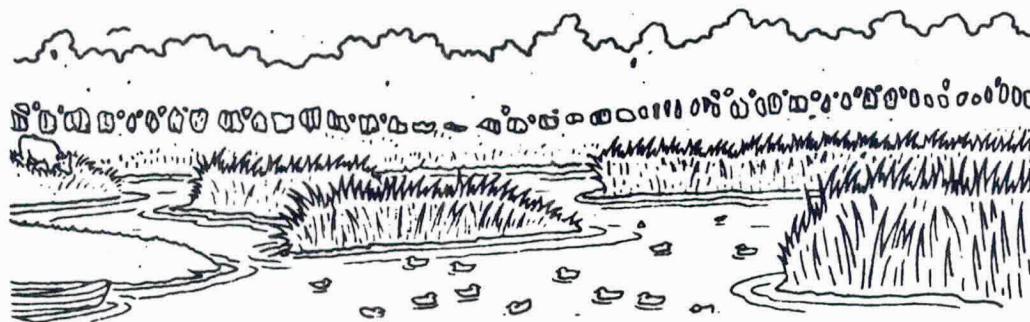
These field trips were all highlights of our summer and fall program. The children were able to be active participants in their learning, they saw new exciting and stimulating things and they had lots of fun! The teachers were able to extend the children's thoughts, ideas and learning back at the child care center. Teacher's focused on providing activities and equipment similiar to what the children saw and experienced on the field trips. They also posed questions that extended the children's thoughts and actions.

Many times we were surprised by the direction the children took in their learning. The three year old classroom had a wonderful time at Jackson Bottom Wetlands exploring the preserve. When we came back to the Center, we found that the focus for them of their experience was the evidence of animals and especially the birds and bird houses and feeders. The classroom teachers picked up on this interest and provided materials to make bird houses and feeders, books and other activities about birds. The children also "decorated" a tree for the birds in December with food. We are still watching the birds (and squirrels!) feeding in the bird feeders out in our play yard.



July, 18, 1995

Parents,



Next week we will be taking our field trip to Jackson Bottom Wetland Preserve. We will go on two separate dates; with ten children scheduled Tuesday, July 26 and 10 children scheduled for Friday, July 29th.

We will leave the Center at approximately 9:30 am and return to school approximately 12:30 pm, after having lunch at a park near the wetland. Sack lunches will be provided by our food service for the children. Adults who attend the trip will need to bring their own lunch.

Our feet will probably get wet. Please send children in shoes appropriate for water. We may encounter insects; long pants are probably a good idea. You may also wish to apply insect repellent to your child that morning.

The permission slips are on our door. PLEASE sign next to your child's name. We must have a signature for children to attend. Should children scheduled to attend on Tuesday miss school or arrive after we have gone, Friday will not be a make up day option. The spots for Friday are also full. Please make sure to mark the date your child is scheduled to attend on your calendar; and that children arrive by at least 9:15 am on the day they are scheduled for the field trip.

Thanks!

Pam

TUESDAY  
JULY 26

DeMirra  
David  
Devin  
Emma  
Jordan Whitcher  
Jordan Whittington  
Kendahl  
Porsche  
Sam  
Santiago

FRIDAY  
JULY 29

Brittany  
Christopher  
Eudee  
Jordan B.  
Kayla  
MacKenzie  
Mikey  
Scotty  
Tyler  
Yaryed

PLEASE SIGN PERMISSION SLIPS ON DOOR.....THANK YOU!



DINOSAUR ROOM - KINDERGARTEN  
SUMMER FIELD TRIPS 1995  
METRO WATER ECOLOGY GRANT

\* Sack lunches

DATE	THEME/WHERE
June 13	General Water/Oaks Bottom Park
June 20	Weather/OMSI
June 27	Water Around Us/Water Treatment Plant (Columbia River) *
July 5	Ponds/West Moreland Park *
July 18	Marshes/Jackson Bottom Wetlands *
July 25	Sauvies Island
August 1	Lakes/Blue Lake Park *
August 8	Laurelhurst Park *
August 15	Rivers/Tryon Creek Park *
August 22	Marriot Marina
August 29	Icebergs, Glaciers/Zoo *
Sept. 5	Oceans/Bonneville Dam *

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### CURRICULUM PLANNING AND IMPLEMENTATION

We began our planning of the Water Ecology Curriculum with a teacher meeting in April to discuss the grant, what we hoped to achieve, teacher interests within the theme of water, interests that we have noticed the children showing with water, brainstorming some possible activity ideas and planning what equipment and materials we would need to purchase.

We discussed that one of our main goals for this project was to begin focusing more on the children and what they were actually doing with the materials and activities we were providing for them. Our hope was to stimulate exploration, investigation and experimentation. We recognized that these are traits that most children seem to naturally have. Our role as teachers then was to provide time, space and materials so that this "scientific investigation" could be encouraged. We also had to learn to pose questions to the children that were not disruptive of their play and learning but that stimulated their thinking and helped them to the next level of learning and exploration.

We also discussed that with the above things in mind, any curriculum that we developed would need to be flexible to allow for the individual learning of the children in each group. Developmental differences as well as individual differences should be allowed for. Teacher planned activities should be able to be successfully completed by children at different developmental stages.

A general curriculum guideline and supplies needs document was compiled and is included in this report. Teachers documented progress in planning sheets and "curriculum webs" examples of which are also included in this report. The purpose of the curriculum webs is to document the children's emergent learning. This project was our first experience with documentation in this way and teachers have commented that they have progressed in their own abilities both to observe and document the emergent learning of the children.

We also documented the children's learning and progress with photo's and video. We also keep individual "anecdotal" reports for each child.

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One of the most exciting aspects of the curriculum development and implementation has been the growth in teacher learning and practices. We continue to use this "scientific investigation" approach in our planning. We not only plan in this way with our preschool classes, but also with our infant and toddler program.

We have seen real growth in the quality of care we can provide for all the children at VOA SECCC. The daily schedules are more respondent to the needs and developmental levels of individual children in every room. The children are challenged daily to explore, investigate, imagine and pursue their individual interests.

The materials we were able to purchase are also having far reaching effects. Many of them can be used year after year. Many of those that will need to be replaced, we plan to find recyclables to use. We've also been able to resource some catalogs that provide recycled materials at low cost.

Some of our large equipment purchases, such as water tables, will be used year round for many years to come. An equipment list is included in the curriculum plan section.



May 16, 1994

Dear Goldfish, Alligator and Dino. Parents,

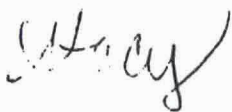
We will be beginning a Water Ecology Curriculum unit with the children this week. Last Fall, we received a grant from Metro through the Metropolitan Greenspaces Project. This has allowed us to purchase some new materials for the children and to plan a few field trips for the summer. It has also given us funding to develop a "water ecology curriculum" which we will be incorporating into our regular daily schedules this summer.

The goal is to encourage the children to explore, experiment, investigate and create using the medium of water. There will be many opportunities for them to discover and learn through the materials and activities that are planned by teachers. In addition, we will be watching the children to see what they are creating with what is provided. Our focus will be to observe their interest (and learning) by adding additional materials and finding books and activities that compliment and extend those discoveries.

When the weather cooperates, they will have access to many "wet", water activities outside. You can help us by remembering to have an extra pair of clothes in the cubbies. If you have any old towels that you are no longer using, we would love to have them on hand as well.

We will have more information about field trips and speakers coming in as we go along. Please come and talk to Joan or me if you have any questions or suggestions.

Sincerely,



Stacy Goodwin  
Early Childhood Education Coordinator



# Emergent Curriculum "Web"

## Building Toys

Lincoln Logs  
w/ horses  
Plastic animals in  
unit blocks  
soft-colored blocks  
large wooden blocks  
Plastic wrap - blue (water)

## House Area / Dramatic Play

Pet Store  
- stuffed animals

## Art / Sensory

Paper Bag  
Puppets  
mix flour  
& water  
(paste)  
add tissue  
Paper collages  
color mixes  
Plastic animals in  
Playdough /  
water  
rocks added  
to water  
Pouring +  
measuring  
cups

**JUNE/SUMMER  
ANIMALS/  
WATER**  
Theme / Project

## Manipulatives / Table Toys

Counting bears  
bed bugs w/ large  
tweeters  
Added to water-  
transfer activity

## Book / Area

Frogs  
Come Back Kitten  
Quick As A Cricket  
Eagles  
If I rode a Dinosaur  
Seashore  
The Seashore  
One Little Kitten  
The Thirsty Crow  
winter The Little Rabbit

## Science

mix shave  
cream/water  
Add to dried  
glue  
ice/melt

## Outside / Music / Mvmt.

Field Trip  
Jackson  
Bottom  
Playground  
Observe bugs  
water/sand  
Bingo  
Alligator  
song  
(puppets)



# Emergent Curriculum "Web"

## Building Toys

helped Jessica sew  
or sleeping bags

## House Area / Dramatic Play

- \* Went camping at our new campground
- \* Went swimming in our lake
- \* We practiced our CPR on our drowning friends
- \* Turned our lake into a waterbed
- \* Took our fishing poles to the lake and went fishing

## Art / Sensory

- \* We print/painted an octopus w/ blue and green paint
- \* Added seaweed
- \* Painted waves
- \* Car painted river
- \* Watercolored fish
- \* Made fishing poles w/ "line" and went "fishing."
- \* Cotton ball painted rocks
- \* Made Duck, Turtles, seals, dolphins, jellyfish, starfish, octopus and whales

## Animals That Live in the WATER

### Theme / Project

### Book / Area

- \* Spots B-Day Party
- \* One Snail and Me
- \* Turtle Tale
- \* Tommy's Adventure  
Camping
- \* Read about Tiger Sharks and Octopi

### Science

- \* Brainstormed a list of animals that live in the water
- \* Fish brainstorm game
- \* Sink and Float

### Outside / Music / Mvmt.

- \* Washed our classroom chairs
- \* Went fishing in a cardboard boat
- \* Fieldtrip to Salmon St. Fountain
- \* Fieldtrip to Laurelhurst Park to feed the ducks
- \* We listened to Native American music and pretended to go camping
- \* Some of us went ice skating on our lake
- \* We played the drums in the puddles on our F.T.
- \* We played Follow the leader through/around →

## Manipulatives / Table Toys

## SENSORY

We made purple playdough then Anthony made a turtle while Matthew made an alligator. Turtle and fish in water table. Water table Ocean w/ animals and shells.

Bubbles in water table



COOKING → 1 egg, 1/2 cup (carrots, potatoes, broccoli, celery, onion, zucchini)

Jiggelers

YUMMY DOUGH → 1/2 c brown sugar  
1/4 c peanut butter  
1 T granola

MIX

# PRESCHOOL PLANNING SHEET

ROOM GOLDFISH

MONTH JULY/AUGUST

\*Science Theme  
WATER

THEME/PROJECT Animals that live in the water  
Ocean, river, pond/lake

INTEREST CENTER	PROPS/ACTIVITIES
BUILDING TOYS	Animals that live in water, blue paper for water, boats
MANIPULATIVES	
HOUSE AREA	Camping → tent, fire pit, body of water taped to the floor, backpacks, fishing poles
DRAMATIC PLAY	
ART	OCEAN → Print paint ocean, add seaweed, whales, starfish, octopi, dolphins, seals, fish, seagulls, jellyfish RIVER → cor paint river and rainbow trout, plants, boats POND/LAKE → Finger paint lake add turtles, frogs, ducks, fish
SENSORY	Water Table → add animals, wash camping dishes, diff. forms of ice, bubbles, sponges, Pollution (THEMES pg. 297)
MUSIC/MOVEMENT	Islands (musical) <span style="float: right;">New GAMES Person to Person pg. 68 SHOE STEW pg. 79 Popcorn Tag pg. 86</span>
OUTSIDE	Bubbles, add water to sand (erosion), Bucket Brigade (THEMES pg. 296)
BOOK AREA	Add Theme Books
SCIENCE	sink and float, things that do/dont dissolve in water (flour, salt, dirt, paint, rocks, bark chips, sand), pick up objects with tongs,

The Incredible  
Indoor  
Games  
Book

CIRCLE TIME PLANNING SHEET

ROOM GOLDFISH

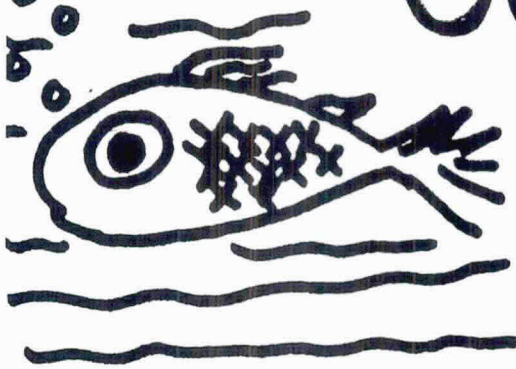
MONTH JULY / AUGUST

MORNING	<p><u>CIRCLE ACTIVITIES</u></p> <ul style="list-style-type: none"><li>* Goldfish</li><li>* Fish brainstorm</li><li>* salt water</li></ul> <p>} The Learning Circle</p>
AFTERNOON	<p><u>BOOKS</u></p> <p>Vegetable Soup Once Upon a Fishhook</p>

CHARITY

# GOLDFISH

JESSICA  
Florence



DATE: Tuesday October 4th

## WHAT DID WE DO TODAY?

This morning for breakfast we ate yogurt, granola, fruit cocktail and toast. Afterwards we got ready for the first day of our fieldtrip. Today it was Elae's, Royale! Carlie's, Ryan's, Yesenia's, Dylan's, Peanut and Alex's turn to go to Jackson Bottom Wetlands. We had a great time. When we got there we met our tour guide, Jan. We sat down and she showed us bird nest, a beaver pellet and skull bone from the animal nutria. That's an animal that is like a beaver and it has orange teeth like Max. When we went on our walk we all got to wear binoculars. That was too cool. On our walk through the woods we saw spiders, bird houses, grass hoppers, mushrooms growing on a tree, moss and animal poop. We also saw black berries, red berries, crab apples, walnuts and yellow apples all for the animals to eat. After our trip we went to a park and ate a picnic lunch at picnic tables. The children that stayed at school had a quiet day as the waited for us to come back. They went on a walk and played on the ladybug playground. We have all had a great day! see you tomorrow.

## HILDREN

WHO WAS HERE TODAY	NAP
HANQUA	YES
YALE	YES
YLAN	YES
OSHUA	YES
LOE	YES
EANUT	YES
LEX	YES
ARLIE	YES
ACHARY	YES
RYAN	YES
AY	YES
ANTHONY	YES
ESENIA	YES
MATTHEW	YES
TERREL	YES
ORDYN	YES
HERISE	YES



CHARITY

# GOLDFISH

JESSICADATE: WEDNESDAY OCTOBER 5th oops!!

## WHAT DID WE DO TODAY?

for breakfast this morning we ate orange muffins with peaches.

At 9:30, shaniqua, Terrell, cherise, Jordyn, Ray, and matthew very excitedly walked with Lilie Mae and myself (Jessica) outside to get ready to hop into the van that would take us to Jackson Bottom Wetlands Preserve in Hillsboro. When we arrived there we met a nice lady named Jan. she had us sit down in a circle before we started our walk so that she could share with us some of the things we might see in the wetlands. she showed us plastic toy frogs, a rubber duck that was yellow, A large birds nest and a small birds nest, and a glove that had the fingers taped together to represent a frog's webbed foot. Then we were on our way down a path that winded its way through a thicket of oak trees, birch trees, maple trees, apple trees, and many berry bushes. Along the way we saw

## CHILDREN

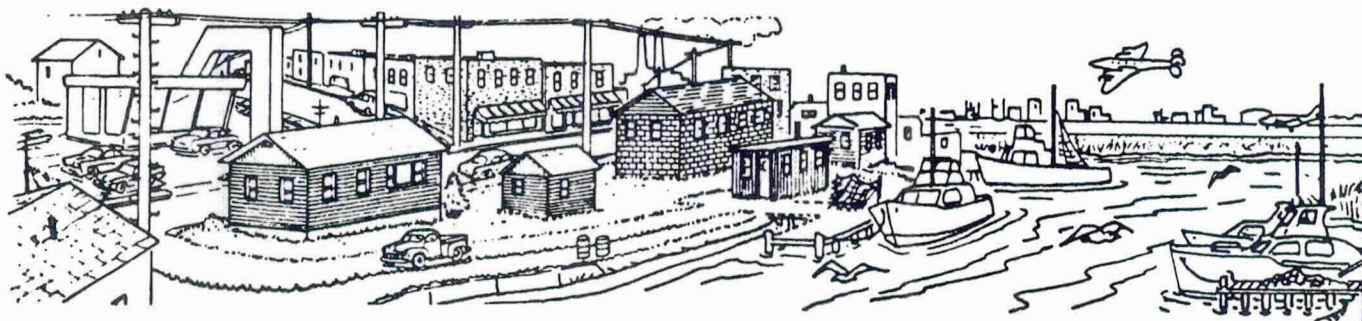
WHO WAS HERE TODAY	NAP
SHANIQUEA	ABSENT
ROYALE	ABSENT
RYLAN	YES
OSHUA	ABSENT
ELOE	YES
PEANUT	RESTED
ALEX	YES
CHARLIE	RESTED
LACHARY	ABSENT
RYAN	ABSENT
RAY	YES
ANTHONY	ABSENT
ESENIA	YES
MATTHEW	YES
TERREL	YES
JORDYN	YES
CHERISE	YES

many man-made bird houses. Jan lifted the children up to peek through the hole of one bird house, but it was empty. There were lots of birds flying from tree to tree above us. Some of the birds flew so fast for us to see them. The trail followed along the bank of the Tualitin River for a bit. Jan helped the children recognize which way the water in the River was going by watching to see which direction the leaves were traveling on top of the water. As we were about to come out of the thicket, Jan told us to hold our arms out and tip our heads back. She then told us to feel the coolness of the air. When we stepped out of thicket and into the meadow, Jan asked us if the air was still cool. We held out our arms and told Jan that the air was warmer now. And indeed it was! The sun was brightly shining. We also saw tractors digging new holes for rainwater to collect in to make new ponds.

When we left our tummies were growling! We ate lunch at Shute Park in Hillsboro and afterwards played on the climbing structure. 😊



**WATER ECOLOGY EDUCATION PROJECT**  
**VOLUNTEERS OF AMERICA S.E. CHILD CARE CENTER**  
**PRESCHOOL (3-5 years) CURRICULUM**





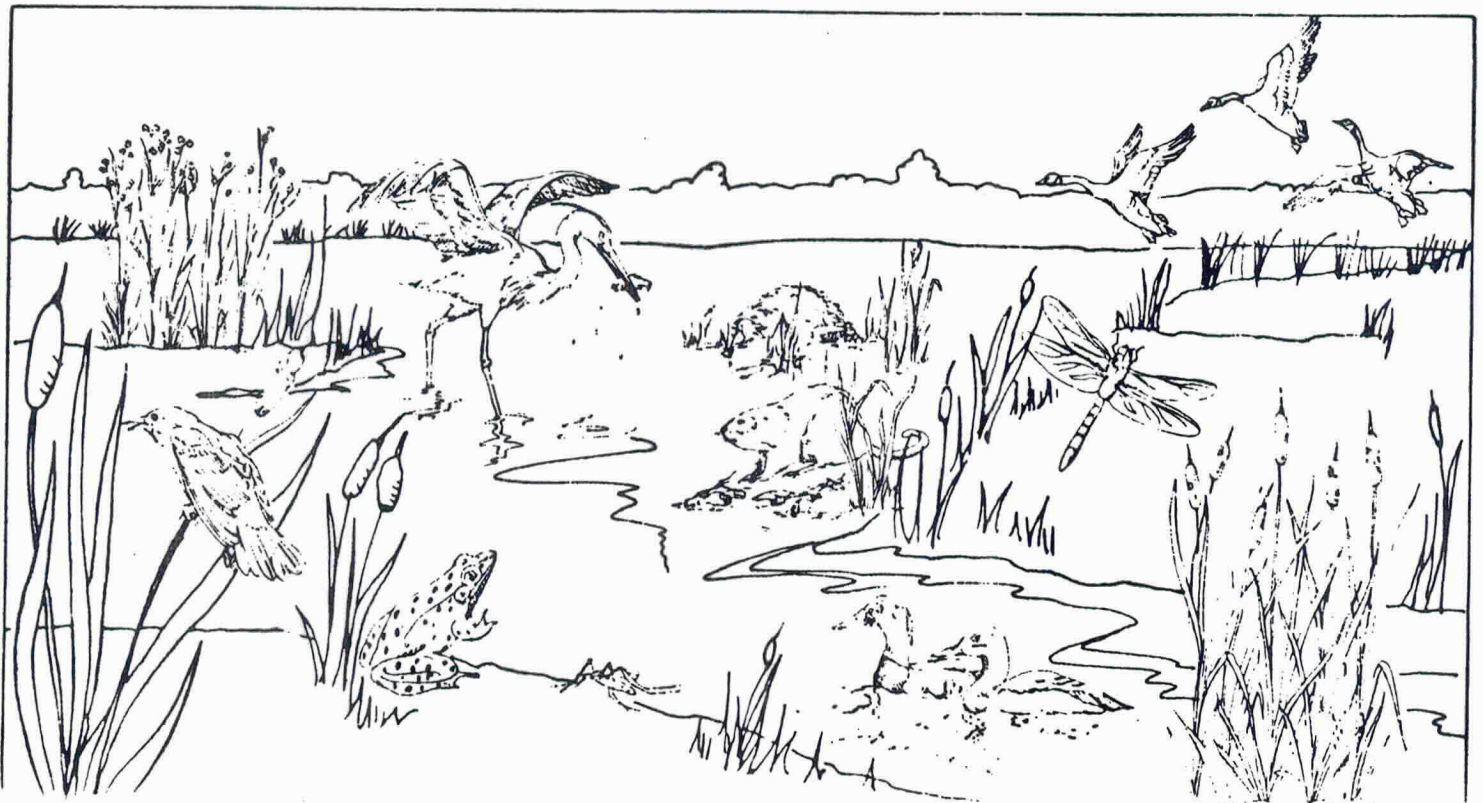
## Introduction

Young children are "natural" scientists. They are eager to explore, discover, learn and create. We know that children learn best when provided with many opportunities for "hands on" experimentation. This project aims to provide the time, space and materials needed for young children to hypothesize, experiment, observe and verify the water ecosystems in our community.

One of the most familiar elements in our environment is water. Children have many experiences on a daily basis with water. Water provides almost infinite varieties of potential multisensory experiences.

In keeping with VOA philosophy and general curriculum guidelines, our goals in implementing this project follow:

1. To encourage self-direction and motivation.
2. To give many choices in process and outcome.
3. To provide opportunities for social interaction (choosing to cooperate in groups) and independent discovery.
4. Children participate in active manipulation of materials.



Water Ecology Education Project  
VOA SECCC April 1994

Children do not "*acquire* knowledge that is transmitted to them; rather, they *construct* knowledge through their intellectual activity and make it their own." (Chaille, Britain 1991) Every child brings their own experiences, ideas, values and approaches to learning. This diversity can be welcomed and encouraged through providing a rich and varied environment for exploration. This program will introduce children to three concepts using water as the material for discovery. These three are: movement, conservation of volume and ecology.

### The Environment

The classroom setting and outside environment is very important in providing a developmentally appropriate curriculum. Children will be provided with many opportunities for exploration and experimentation both inside and outside. Children will be self-directed in their movement from one activity to the next and they will have adequate time to fully experience and explore. Activities will be available to children until they have all had opportunity to experience them. Children will be encouraged to work cooperatively in problem solving and will be given space and time to work individually if they choose to do so.

### The Role of the Teacher

The teacher is responsible for supporting and stimulating the child's learning. Teachers will provide materials for the children, observe play and add props or direct children to additional resources as needed. Teachers will help children to express themselves, resolve conflicts and interact constructively. They will provide experiences and activities for the children knowing that "a hands on curriculum is one that enables children to be actively involved in constructing knowledge- one that is driven by their questions that gives them considerable access to materials and many choices as to their use." (Chaille, Britain ) Teachers will: 1. present introductory information. 2. Observe and record the child's play. 3. Question and encourage children to extend learning.





Metro Science Grant  
May 5, 1994

The type of questions teachers ask and the timing of those questions can determine whether or not the child will continue to pursue exploration and the level and complexity of that exploration.

The purpose of interrupting play with questions is to show interest in the child's learning and to extend their learning. Questions should be "open ended" ( have more than one possible answer).

Some questions to extend learning and promote deeper exploration follow:

- |                                  |  |
|----------------------------------|--|
| Can you think of a way to...     | encourage to continue  |
| Do you have some idea's about... |  |
| How do you feel about...         | can generate perspective taking<br>and an understanding of the situation |
| What would happen if...          |  |
| What are some ways to...         | can generate solutions   |
| How can we...                    |  |

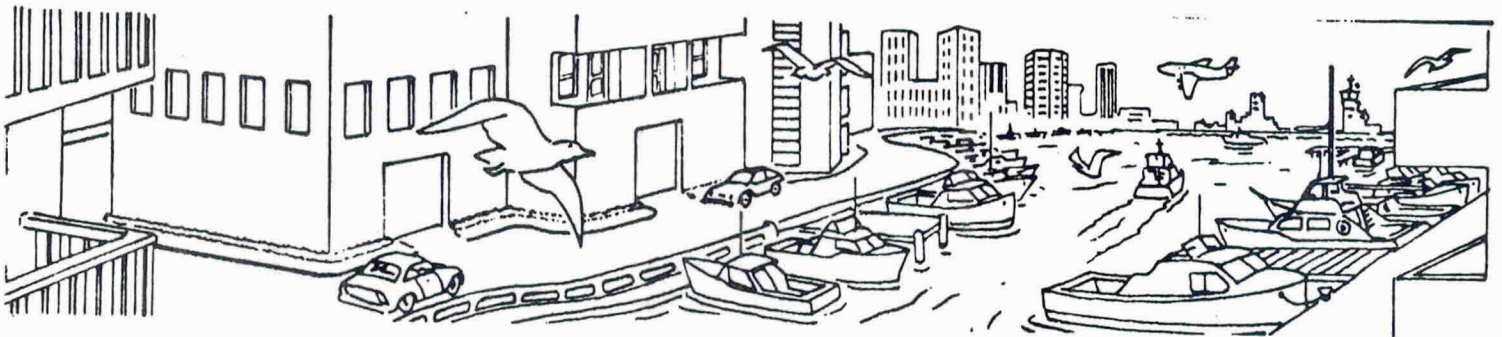
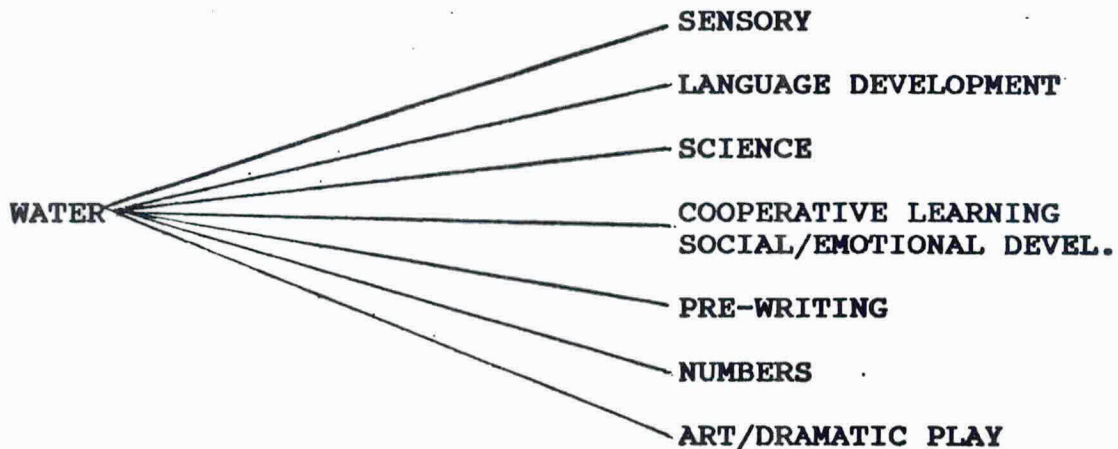




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April 1994

**Introduction of Materials and Experience**

This program is designed to be integrated into all aspects of curriculum planning. This does not mean that all learning centers are planned around the theme of water but rather that at some time during the project, all areas of development will be planned for within the "water" theme. The direction the children determine to go (the CHILD DIRECTED learning), may be very different from the teachers original plan (the TEACHER DIRECTED learning). This is a thematic-integrated approach.



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## **MOVEMENT**

Watching water move and effecting that movement can provide many opportunities for active participation for children. The water cycle (air, ground, rivers, ocean, air) can be explored by children in many manipulative activities. The ways that water moves on earth and objects that divert that flow can also be a very interactive experience. Some materials and activities to provide for children follow.

### *Outside Play Yard*

Gutters: Children will be provided with rain gutters in varied lengths and widths to use in making water "runs". Other props can include; small boats, water animals, leaves, grasses, rocks, funnels, etc.

Water Tables: Water tables will be taken outside for a variety of activities: Props for the water table will include funnels, sifters, strainers, clear plastic containers of varied size, plastic water animals, leaves, sand, dirt, etc.

Washing Clothes: Large bucket or tub, washboard, soap and doll clothes.

Filtering Water: Large tub, sand, gravel, colander, netting

Forcing Water Movement: Squirt bottles, eye droppers, etc.

### *Inside Classroom*

Water and Oil: Empty clear plastic bottles filled with water, oil and food coloring. Small boats and plastic animals can also be added to bottle.

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## CONSERVATION OF VOLUME

### *Outside Play Yard*

Water Collection and Measurement: Place clear containers of different size outside to collect water. Bring water in and measure, over time, graphing levels of rainfall.

Water Table: Clear containers of different size and shape. Clear water and colored water.

### *Inside Classroom*

How many cups? : See attached.

Ice Is Nice: See attached.

Water Experiments Table: Clear and colored containers , water , funnels, flat and med. and tall shaped containers, colored water, make predictions of which containers will hold the most and least and same amounts.



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## **ECOLOGY**

### *Outside Play Yard*

Gutter Clean Up: Leaves, small stones to clog up the gutter.

Gutter "River": Gutters, stones, sand, plastic fish and other water animals.

Water Table Clean Up: Soap, water, dolls, toys to clean

### *Inside Classroom*

Water collage: Pictures from magazines of outdoor water areas to collage. Pictures of water uses inside homes all around the world.

Water Clean Up of Room: Soapy sponges, water, clean tables and chairs, etc.

Water Homes: Plastic zip lock bags, water, sand, plastic fish/animals, plants, etc.

Block Harbor: Add boats, sea and river animals to block area.

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#### MATERIALS LIST

1. Gutters
2. Magnifying Glasses
3. WATER PLAY:  
Sifters, funnels, strainers, netting, colanders, screening
4. Various size clear containers
5. Sand
6. Food coloring
7. Boat toys, plastic fish, water animals
8. Empty plastic bottles
9. Large paper for graphing
10. Pie tins
11. Coffee filters
12. Paint brushes, rollers
13. Basters, eye droppers, squirt bottles
14. Sea Shells
15. Gravel
16. Paint Easels for outside
17. Bubble wands, bubble makers
18. Large washing tubs
19. Dish washing liquid
20. Plastic sea animals
21. clothes pins

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GREENSPACES SOURCES

The Young Child As Scientist, Christine Chaille, pgs. 16-21

Christine Chaille, Portland State University, School of Education  
Professor

Teaching Young Children Using Themes, Marjorie Kostelnik, pgs.282-299

Nature Scope - Wading Into Wetlands, Ranger Rick

"Making the Most of Water Play", Sandra Crosser, Young Children,  
July 1994

Pat Hill, Jackson Bottom Wetland Preserve, Wetlands Coordinator

"Scholastic, Early Childhood Today", March 1994





Water Ecology Education Project  
Volunteers of America SE Child Care Center  
1994-1995

ecology