

**CONSERVATION: MY WORLD IS YOUR WORLD**

Grade Level: Kindergarten

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Length of Unit: Six Days (approximately 30 minute lessons)

**I. ABSTRACT**

- A. This Kindergarten unit focuses on the understanding that some of our natural resources are limited. The students will learn about water, air, land, pollution, reuse, reduce and recycle. This unit should be taught in conjunction with Earth Day, April 22. This Science unit encompasses Language Arts, Geography, Music, Art and Math.

**II. OVERVIEW**

- A. Concept Objectives
1. Understand that some of the earth's natural resources are limited.
  2. Develop an awareness of our individual responsibility to take care of the earth.
- B. Content Objectives
1. Conservation: Some natural resources are limited, so people must be careful not to use too much of them.
  2. Practical measures for conserving energy and resources.
  3. Some materials can be recycled.
  4. Pollution can be harmful, but if people are careful they can help reduce pollution.
- C. Skill Objectives
1. making choices
  2. classifying and sorting objects
  3. actions and consequences
  4. developing vocabulary
  5. using letter sound knowledge to write simple words
  6. observing physical characteristics
  7. making predictions
  8. critical thinking skills
  9. identifying natural resources
  10. writing or drawing knowledge of a particular topic

**III. BACKGROUND KNOWLEDGE**

- A. For Teacher
1. Hirsch, Jr. E.D. What Your Kindergartner Needs to Know. New York: Dell Publishing Co., 1991. ISBN 0-590-44977-X.
  2. Zeman, A. Everything You Need to Know About Science. New York: Scholastic, Inc., 1997. ISBN -0590-49357.
  3. Resource Guide: Learn to Read (Science). California: Creative Teaching Press, 1996. ISBN 1-57471-144-X.
- B. For Student
1. This unit should be taught sometime after a unit on weather.
  2. The students should have acquired fine motor skills to perform writing tasks.

**IV. RESOURCES**

1. Norris, J. Saving the Earth. California: Evan-Moor, 1997. ISBN 1-55799-632-6.
2. Van Allsburg, C. Just a Dream. New York: Scholastic, Inc., 1990. ISBN 0-916119-30-0.
3. Williams, R. Reduce, Reuse, Recycle. California: Creative Teaching Press, 1994. ISBN 0-916119-30-0.
4. Williams, R. Let's Take Care of the Earth. California: Creative Teaching Press, 1994. ISBN 0-916119-42-4.
5. Williams, R. If a Tree Could Talk. California: Creative Teaching Press, 1994. ISBN 0-916119-43-2.

## V. LESSONS

### LESSON ONE: Just A Dream

#### A. Daily Objectives

1. Lesson Content
  - a. Some natural resources are limited, so people must be careful not to use too much of them.
2. Concept Objective
  - a. Understand land and water resources are limited.
3. Skill Objective
  - a. Identify space, air, and water as limited.

#### B. Teacher Materials

1. Book: "Just a Dream" by Chris Van Allsburg

#### C. Background Notes

1. The book, "Just a Dream", by Chris Van Allsburg was written in 1990 based on a quote by Walter Kelly "We have met the enemy and he is us."(Pogo); Van Allsburg writes about the future and what would happen if we did not take care of the water, air, and destroyed our personal space. The illustrations along with the text will create interest in the students and help them to think about the consequences of not clearly thinking through the choices we make. For example, man is polluting the air with smoke stacks spewing out pollution from a factory making pharmaceuticals, "Wonderful medicine," The workman replied, "for burning throats and itchy eyes."

#### D. Key Vocabulary

1. peered – looked
2. smokestack - like chimney, only larger
3. foul – bad
4. pollution – dirty
5. enormous - very big; huge
6. drifting – float
7. limited - can be used up

#### E. Procedures/Activities

1. Show student book and read title "Just a Dream" and introduce author Chris Van Allsburg.
2. Ask, "What do you think this story could be about?" Let the student make predictions.
3. Reading to the page where Walter is going to the future. Ask, "What do you think the future will be like?" "Do you think it will be like the space show with airplanes and robots and machines that make any kind of food you want?" "Or, do you think it will be different?"

4. Show next picture. Ask them if their predictions were correct or not.
5. Read next page and ask "Why do they think all the houses were buried in the garbage?" Discuss how the garbage had filled all the living space.
6. Show next picture and bed in trees. Read the following page about the woodcutters. Ask the student if they thought it was very important to cut down trees to make toothpicks. Discuss how many trees had been cut down in the picture and how long it would take to grow those trees again.
7. Show the next picture. (smoke stacks) and define a smoke stack . Read the page making sure the students understand the word foul. Ask "Why do you think Walter's eyes were itching and his throat sore?" Define pollution. Discuss how the pollution affected Walter.
8. Show next picture of Mt. Everest and ask the student if they have ever heard of Mt. Everest. Discuss how it is the tallest mountain on earth and a well-known beautiful mountain. Define enormous. Discuss how the hotel on Mt. Everest would effect the mountain and it's beauty.
9. Show the next picture (at sea) and read the following page. Ask the students why the fisherman was so happy to catch such a little fish. "What happened to all the fish?" Talk about possibilities of what happened
10. Have the student summarize what you read in the story so far. Discuss being sure to point out how resources space, air, and water are limited. Space is filled with garbage; air becomes dirty; water polluted has no life.
11. Discuss with the students what they thought the future would be like and how it really was.
12. Discuss how we need to think about our environment. The air we breathe, the life in the ocean, respecting what each gives us. If we are irresponsible the consequences could make our lives very different.

F. Evaluation/Assessment

1. On a piece of paper student will illustrate their understanding of limited resources by drawing the consequence of choosing not to take care of space – air – water. (i.e. my space : their bedroom is cluttered with toys and clothes , as they walk across the room they step on a toy and break it. The consequence of not taking care of their space, they have ruined a toy.)

LESSON TWO: Pollution

A. Daily Objectives

1. Lesson Content
  - a. Some natural resources are limited, so people must be careful not to use too much of them.
  - b. Pollution can be harmful.
2. Concept Objective
  - a. Develop an awareness of our responsibility to take care of the earth.
3. Skill Objective
  - a. Students will compare the difference between clean vs. polluted

B. Teacher Materials

1. Just a Dream by Chris Van Allsburg
2. picture/post card of the Grand Canyon
3. water
4. vinegar

5. two potted plants - one labeled "Water" and the other "Strong Acid." See plant illustration (Appendix A).

C. Background Notes

1. This lesson is a continuation of lesson one. We will finish reading the book Just a Dream (starting with the picture of the traffic on the overpasses), but with a different focus. Today we will be focusing on recognizing that the areas Walter visits: a traffic jam in the city, a barely visible Grand Canyon, and even heavenly visit from a duck, are polluted. The students will become "pollution experts" and help identify areas that are polluted and the possible causes for this pollution. Future lessons will focus on what students can do to prevent further pollution, so please keep discussions and comments focused on identifying where pollution is found and why it is there.
2. A discussion on how acid rain is formed will require that the students already have an understanding of the process of cloud formation and rainfall. This discussion will lead into a very visual demonstration of just how acid rain effects plant life.

D. Key Vocabulary

1. traffic - lots of cars on the road at the same time
2. shrieking – yelling
3. pollution - making something dirty
4. noise pollution - too much noise "dirtying" the air
5. air pollution - dirty air
6. exhaust - the dirty air the comes out of cars
7. foggy - heavy mist
8. smog - air so dirty it is hard to see through
9. flock - a group of birds
10. suspected – thought
11. present - right now; today
12. past - before today; yesterday
13. conserve-to protect or take care of
14. acid rain-dirty rain

E. Procedures/Activities

1. During circle/group time as the students what they remember from the book Just a Dream. Allow the students to respond and briefly discuss responses.
2. Ask the students if they remember what pollution is and review definition --to make dirty.
3. Tell students that today you are going to finish the book Just a Dream, but that they will get to be a "pollution expert" which means that as you read the page they need to help you figure out if the places Walter visits are polluted or not and if it is how did it get polluted.
4. Open the book to the pages that illustrates traffic on highway overpasses. Ask the students if they have ever been on a highway that looks like the one in the book. Define the word "traffic." Read the following page, defining the word shrieking as you read the text.
5. Ask the students if they think this place is polluted and the possible causes for this pollution. Be sure to discuss how the air was polluted in two ways: first, with noise pollution - too much noise "dirtying" the air from all the honking and shrieking of the cars; and second, with air pollution - dirty air from the exhaust or dirty air that comes out of cars.

6. Show the next illustration of the Grand Canyon. Ask the students if they can recognize where Walter is.
7. Read the next page. Defining the words foggy and smog as you come to them in the text. Ask the students if they have ever been to the Grand Canyon or seen a picture of it. Show them the picture or postcard of the Grand Canyon. Compare this picture/postcard with the illustration in the book. Discuss the differences in the pictures and the possible reasons why the pictures look so different.
8. Show the next illustration of a duck sitting on the bed as it is flying through the sky and read the following page. Ask the students "Why do you think the duck couldn't find the pond?" Possible responses for discussion could be: the air was too dirty for the ducks see the pond and the pond wasn't there any more. Discuss reasons why these things might have happened.
9. Show the next illustration where Walter wakes up. Define present as you come to it in the text. Ask the students, "Why don't airplanes and robots seem important to Walter any more? Discuss responses.
10. Complete reading the book beginning from the page where Walter is digging in the trash cans. Briefly discuss Walter's change of attitude and how it effected the future.
11. Review examples of air pollution from the book (factory smokestacks, traffic jam and Grand Canyon). Pose the question to your students, "Can polluted make other kinds of pollution?" Allow the students to respond freely.
12. Lead the students through a brief discussion of how air pollution effects resources on earth. Remind the students of previous lessons when you discussed weather and follow the Question/Response outlined below.
 

Question: "What happens to air?"

Response: It gathers to make clouds.

Question: "What if the air was dirty?"

Response: The clouds would be dirty.

Question: "If the clouds gather moisture and rain, would the rain be clean or dirty?"

Response: The rain would be dirty.

Explain to the students that this dirty rain is called "Acid Rain."

Question: "What happens to the rain?"

Response: It falls to the earth and waters plants.

Question: "What do you think happens to those plants?"

Responses may vary.
13. Take two potted plants and water one with clean water and the other with half water and half vinegar. Explaining to the students that the vinegar/ water solution represents "Acid Rain." Predict what will happen with each plant.
14. Discuss how factories cause chemicals to mix with air causing dirty air and how that will affect the rain and the trees or plants that the rain falls on.

F. Evaluation/Assessment

1. Give the students a blank piece of paper and instruct them to illustrate a picture of a city, mountain or stream. Draw the picture on the bottom half of the lengthwise paper. Fold the paper dividing the picture in half. Label the left side "Clean" and the right side "Polluted." Have the students illustrate the "Polluted" side of their picture.

LESSON THREE: Recycle

- A. Daily Objectives
  - 1. Lesson Content
    - a. We need to recycle to protect our environment
  - 2. Concept Objective
    - a. Develop an awareness of our responsibility to care for our environment and our natural resources are limited.
  - 3. Skill Objective
    - a. The students will classify and sort recyclable items (paper, metal, plastics)
- B. Teacher Materials
  - 1. Reusable items brought from home (i.e. tissue rolls, egg cartons cans, bottles, etc.)
  - 2. Boxes labeled "Paper," "Plastic," "Aluminum (can)" and "Glass."
  - 3. Art supplies such as; tempera paint, paint brushes, glue, tape, string, etc.
- C. Background Notes (Refer to background information)
- D. Key Vocabulary
  - 1. recycle - to use over again
  - 2. environment - where we live
- E. Procedures/Activities
  - 1. Read and discuss "Recycle from Save the Earth."
  - 2. Have the students sort materials brought from home into the labeled boxes.
  - 3. Observe students while sorting and discuss similarities and differences of each item.
  - 4. From recyclable items brought from home, make works of art.
  - 5. Title works or art and put them on display. Invite students from other classes to see creations.
- F. Evaluation/Assessment
  - 1. The teacher will take anecdotal notes during step 3 of procedures of students ability to sort the objects.

LESSON FOUR: Reuse

- A. Daily Objectives
  - 1. Lesson Content
    - a. We need to reuse recyclable to keep the earth from becoming a landfill.
  - 2. Concept Objective
    - a. Develop an awareness of our responsibility to care for our environment and our natural resources are limited.
  - 3. Skill Objective
    - a. The students can identify ways to reuse materials list the three R's, (Recycle, Reuse, Reduce)
- B. Teacher Materials
  - 1. construction paper
  - 2. paint and glue
  - 3. recycled paper
  - 4. newspaper
  - 5. water
  - 6. fork
  - 7. rolling pin

8. scissors
- C. Background Notes (Refer to background information)
- D. Key Vocabulary
  1. reuse - to recycle
  2. landfill - where garbage is delivered
- E. Procedures/Activities
  1. Read Recycle That.
  2. Make the Three R's Flip Book (see Appendix B for illustration and instructions)
  3. Make a conservation bookmark (see Appendix C for illustration and instructions.)
  4. Using recipe in Appendix D, make your own paper.
- F. Evaluation/Assessment
  1. Using the conservation bookmark, students will list the three R's, recycle reduce, reuse.

#### LESSON FIVE

- A. Daily Objectives
  1. Lesson content
    - a. Practice measures for conserving natural resources.
  2. Concept objective
    - a. Develop an awareness of our individual responsibility to help take care of the earth.
  3. Skills objective
    - a. The students will be able to identify at least three ways to conserve our natural resources.
- B. Teacher Materials
  1. If a Tree Could Talk
  2. Pre-made "Reduce" game cards (see Appendix E )
- C. Background Notes (refer to background information)
- D. Key Vocabulary
  1. reduce - to limit you use
- E. Procedures/Activities
  1. Read and discuss If a Tree Could Talk.
  2. Brainstorm with whole class on ways that they can reduce. Write their ideas on the chalkboard.
  3. Play the "Reduce" Match Game. The rules are the same as they are for a memory game. See Appendix E for examples of ways to reduce.
- F. Evaluation/Assessment
  1. Through teacher observation of the "Reduce" Match Game, it will be evident if the children understand the concept of reduce.

#### VI. **CULMINATING ACTIVITY** - Earth Day Every Day

- A. To culminate what the students have learned in this unit, students will participate in Earth Day. The official Earth Day is April 22. You may choose any or all of the following activities. You may want to encourage the students to share their knowledge with another class by inviting them to participate in some of these activities.
  1. Language Arts

- a. Make a big book of Let's Take Care of the Earth. Give each student a copy of the writing frame from Appendix F. Let students find pictures of animals from magazines. Glue pictures to blank area on writing frame. Students will then write in the blanks the name of the animal and where it lives.
  - b. Make a big book of If a Tree Could Talk. Invite the students to use the writing frame from Appendix G to write and illustrate their lines.
2. Math
- a. Graph recycled items. Divide the class into small groups. Give each group a bag of trash collected from the recycle boxes in the classroom. Have the students classify, sort, count and graph their bag of trash. See Appendix H for an example graph.
  - b. Weighing Litter. Weigh an empty box. Have the students collect litter from around the school area and reweigh the box. Compare and discuss the differences in weight.
3. Science
- a. Cleaning polluted water. Add dirt to water to make muddy water. Take a clean flowerpot and at the bottom add the blotting paper. Fill the pot half full with sand. Then add a layer of gravel. Put the flowerpot over a clear pitcher. Pour muddy water into pot. The "filter" acts as a trap to filter the water. The water that comes out of the pot is cleaner than the muddy water poured in. See Appendix I.
  - b. Plant a tree.
4. Music
- a. Sing the "Reduce, Reuse, Recycle" song. See Appendix J.
5. Art
- a. Hands across the world poem. Have children trace, cut and color a circle shape to look like the earth (see Appendix K for dimensions). Share poem from Appendix \_\_. Give each child a copy of the poem cut down to fit inside the circle shape. Invite students to trace their hands on a piece of blue construction paper and glue to either side of the poem.

## VII. APPENDICES

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|----|-------------|--|
| A. | Appendix A: | Acid Rain                              |
| B. | Appendix B: | Reduce, Reuse, Recycle                 |
| C. | Appendix C: | Conservation Bookmark                  |
| D. | Appendix D: | Recipe to Make Paper                   |
| E. | Appendix E: | Ways to Reduce and "Reduce" Match Game |
| F. | Appendix F: | Writing Frame                          |
| G. | Appendix G: | Writing Frame                          |
| H. | Appendix H: | My Litter Graph                        |
| I. | Appendix I: | Cleaning Water                         |
| J. | Appendix J: | Reduce, Reuse, Recycle Song            |
| K. | Appendix K: | Earth                                  |

## VIII. BIBLIOGRAPHY

- A. Baker, J. *Where The Forest Meets the Sea*. New York: Greenwillow Books, 1987. ISBN 0-688-06363-2.
- B. Bash, B. *Tree Of Life*. Boston: Little, Brown & Co., 1989. ISBN 0-316-08322-4.

- C. Canizares, S. *Who Lives In The Rainforest?* New York: Scholastic, Inc., 1998. ISBN 0-590-76961-8.
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#### IX. **VIDEOS AVAILABLE**

- A. Planet Earth: Fate of the Earth
- B. Help Save Planet Earth
- C. Science In Action: Pollution
- D. The Earth Day Special
- E. The Earth At Risk Environmental Series:
  - 1. Clean Air
  - 2. Clean Water
  - 3. Recycling

#### X. **OPTIONAL FIELD TRIPS**

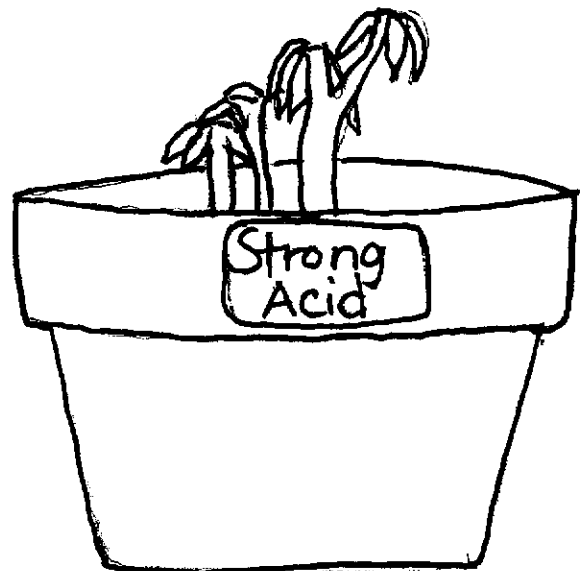
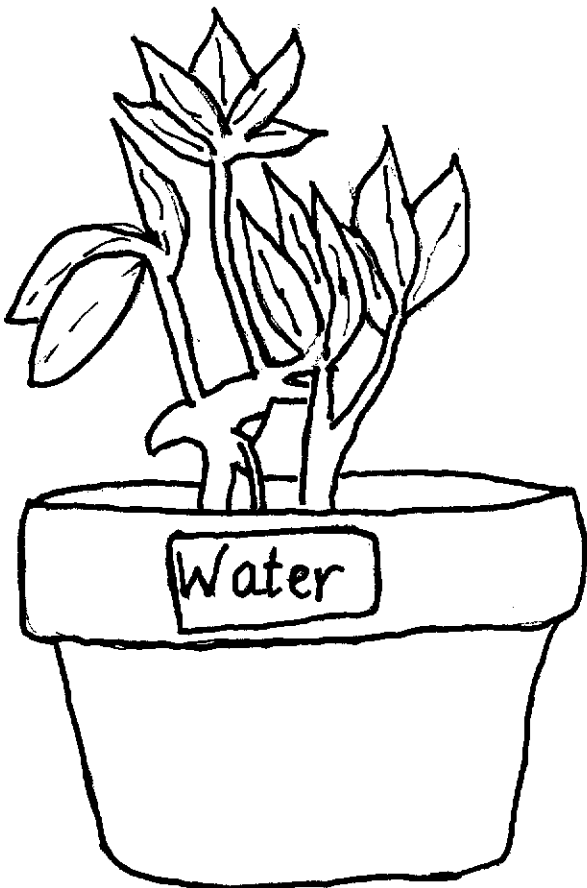
- A. Tour of a local nursery
- B. Tour of a recycling plant
- C. Visit a local landfill
- D. Conservation display at the local Science and History Museum
- E. Have a National Forest Ranger come visit the class

## Acid Rain

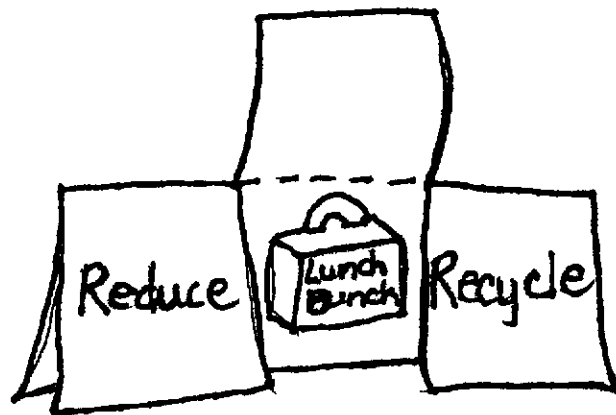
Water one plant with plain water.

Water one plant with a mixture of  $\frac{1}{2}$  water and  $\frac{1}{2}$  vinegar.

Watch what happens to the plant watered with the water and vinegar.



## Appendix B



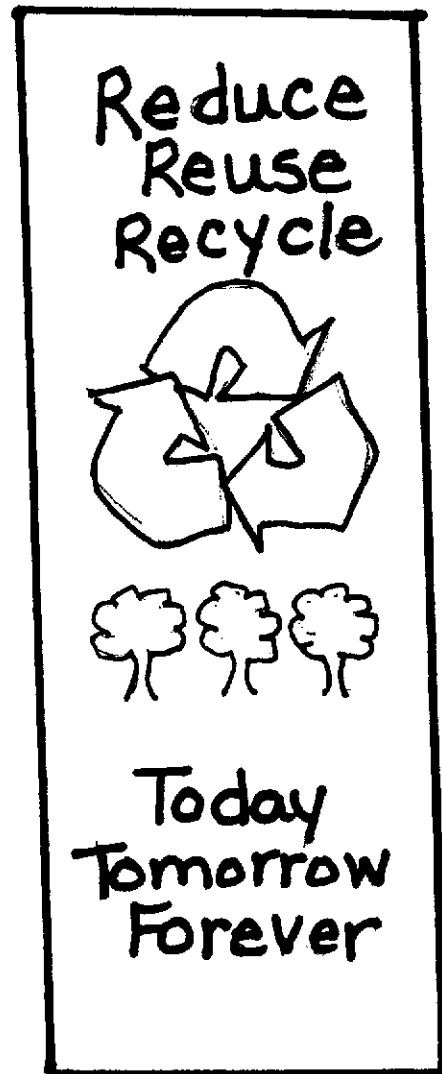
Fold paper in half vertically and then in thirds horizontally. Open the paper and place it in front of you. Cut along the two parallel, vertical folds until you reach the fold at the center of the paper. Fold the flaps down.

Have the children label the three flaps with the words Reduce, Reuse, and Recycle. Ask children to open the flaps and draw pictures showing things they could do to reduce, reuse, and recycle.

# Appendix C

Conservation

Bookmark



# Appendix D

## RECIPE TO MAKE PAPER

1. Soak torn bits of newspaper overnight in a little water.
2. Mash it with a fork.
3. Drain it.
4. Roll it out with a rolling pin and let it dry.
5. Trim the edges and paint it.
6. You can use your paper as a table mat.

# Appendix E

## WAYS TO REDUCE

1. Turn off the water while brushing your teeth.
2. Ride a bike instead of driving.
3. Use a cloth towel versus a paper towel.
4. Use (and reuse) a plastic plate instead of a paper plate.
5. Hang your wet clothes out to dry instead of using a dryer.
6. Turn off the lights when leaving a room.
7. Carpool.
8. Use both sides of the paper when writing.
9. Only take what you will eat.
10. Pack your lunch in a lunchbox instead of using a paper bag.

## "Reduce" Match Game

Turn off the lights	Use a plastic plate	Carpool	Ride a bike	Hang out your wet clothes
Take only what you'll eat	Turn off the water when brushing	Use a cloth towel	Use both sides of your paper	Use a lunchbox not a bag
Hang out your wet clothes	Ride a bike	Carpool	Turn off the lights	Use a plastic plate
Use a lunchbox not a bag	Use both sides of your paper	Turn off the water while brushing	Take only what you'll eat	Use a cloth towel

# Appendix F

The \_\_\_\_\_, the \_\_\_\_\_ is  
home to a \_\_\_\_\_.

Let's take care of the \_\_\_\_\_.

# Appendix G

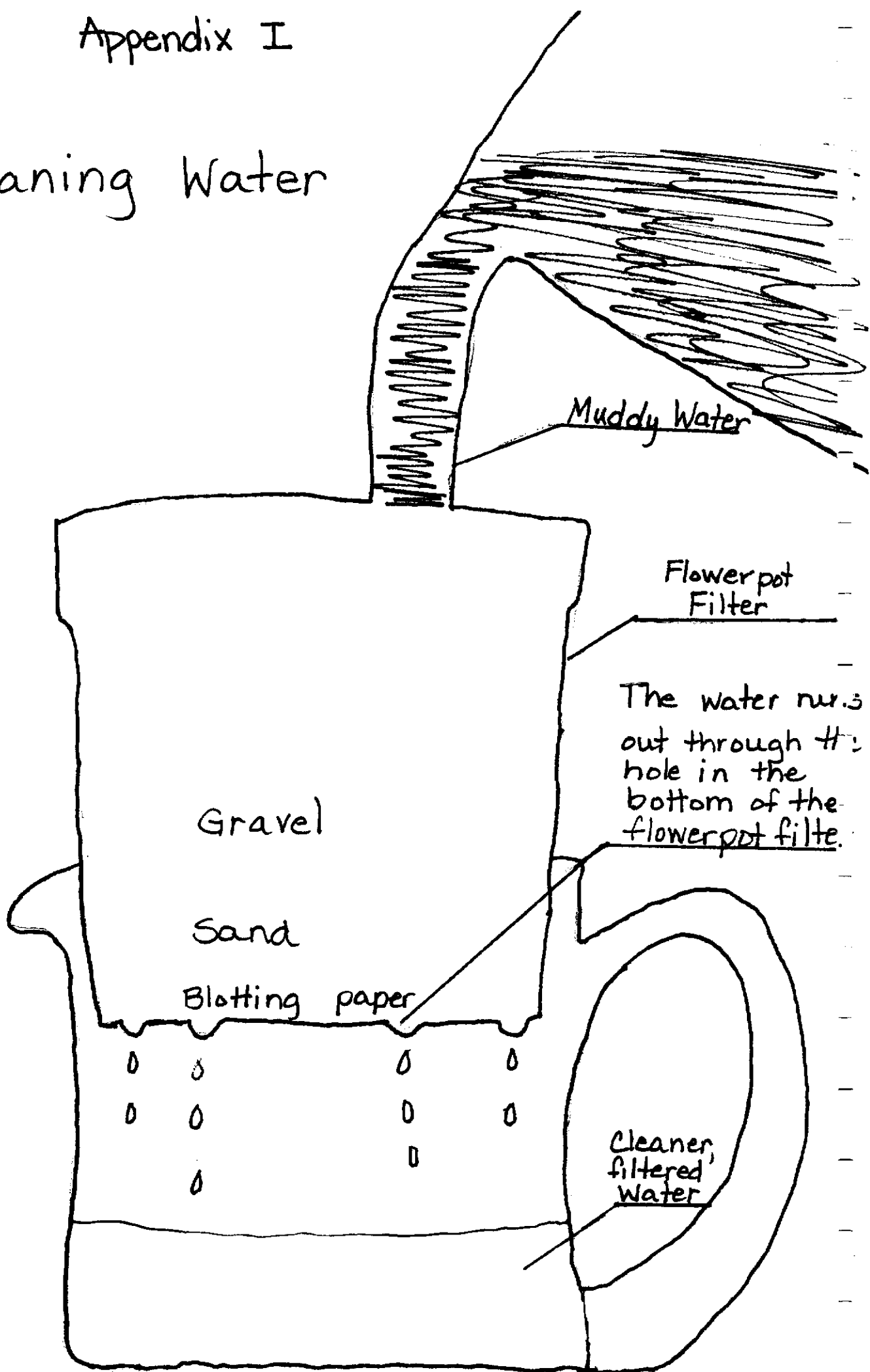
If a \_\_\_\_\_ could talk,  
what would it say?

"Don't \_\_\_\_\_, just walk away."



# Appendix I

## Cleaning Water



# Appendix J

## Reduce, Reuse, Recycle

Lyrics by Rozanne Lanczak Williams

Traditional Melody:  
"The More We Get Together"



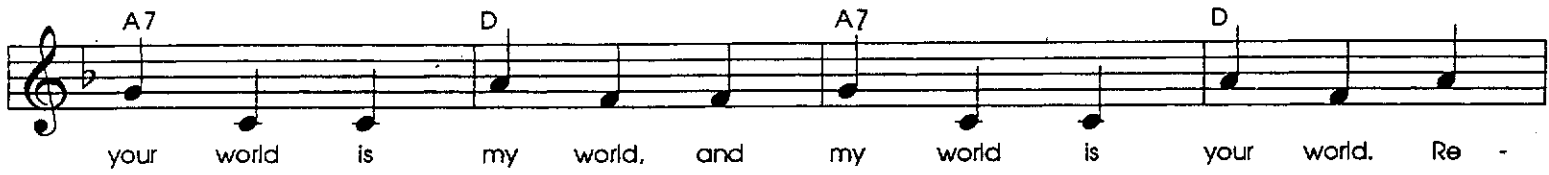
Re - duce, re - use, re - cy - cle, re - cy - cle, re - cy cle. Re -

Chords: D, A7, D



duce, re - use, re - cy - cle. It's ea - sy to do. 'Cause

Chords: A7, D



your world is my world, and my world is your world. Re -

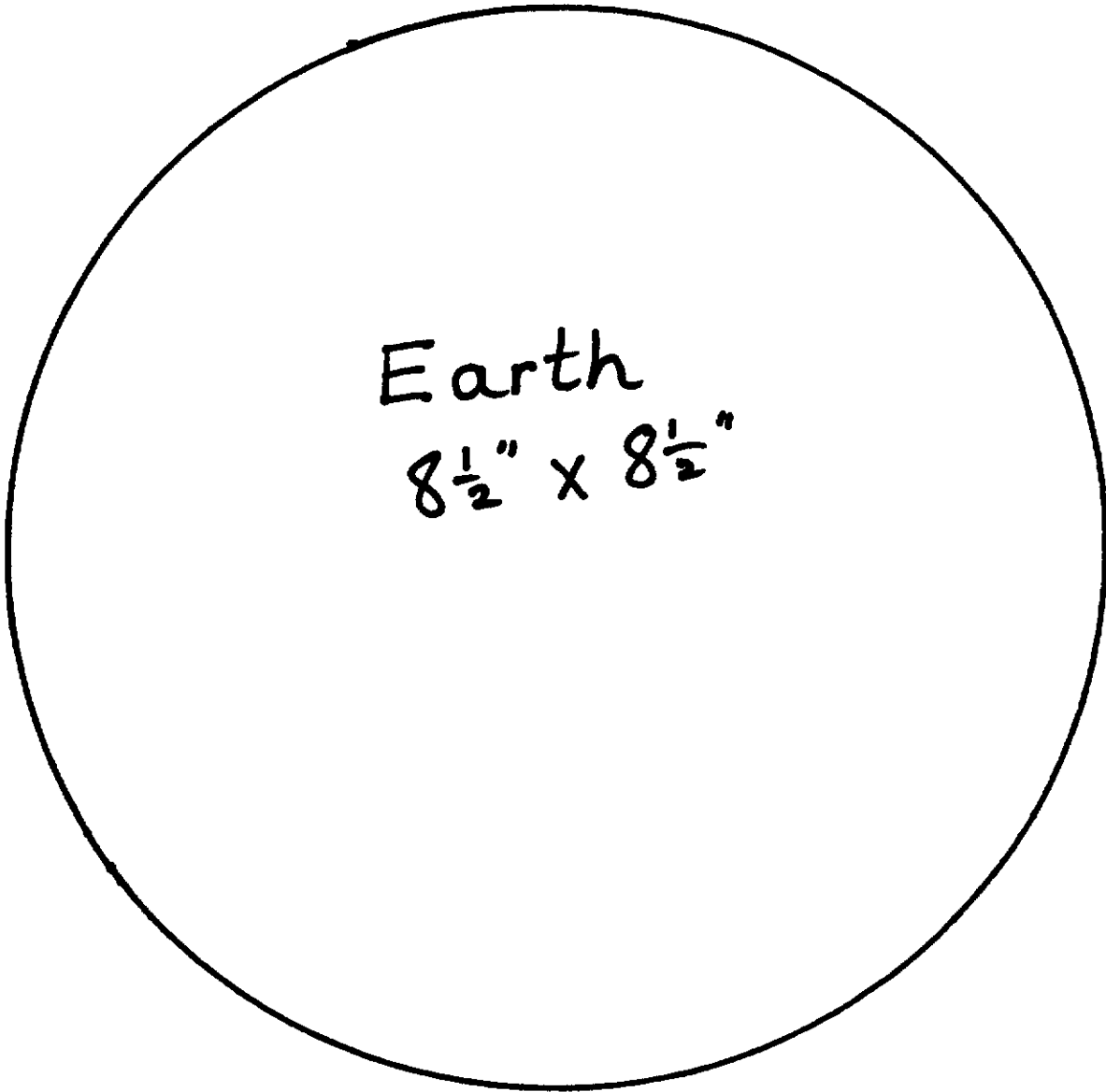
Chords: A7, D, A7, D



duce, re - use, re - cy - cle. It's ea - sy to do!

Chords: D, A7, D

## Appendix K



We live on a ball that is blue and green,  
It's the prettiest place I've ever seen.  
No job is too big, no action too small,  
to make the world a better place,  
it the duty of us all.