

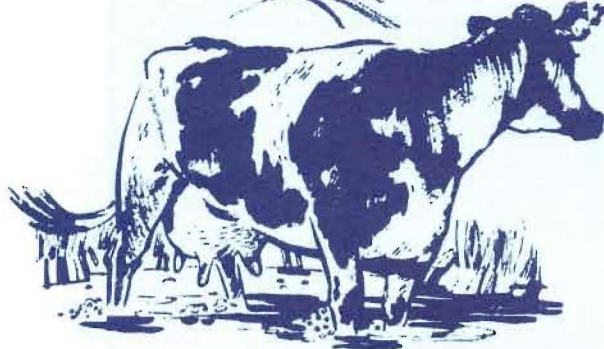
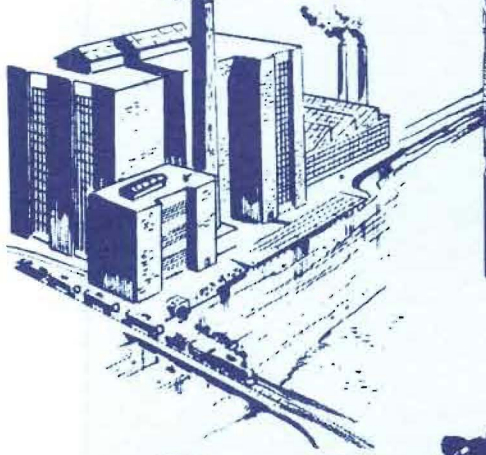
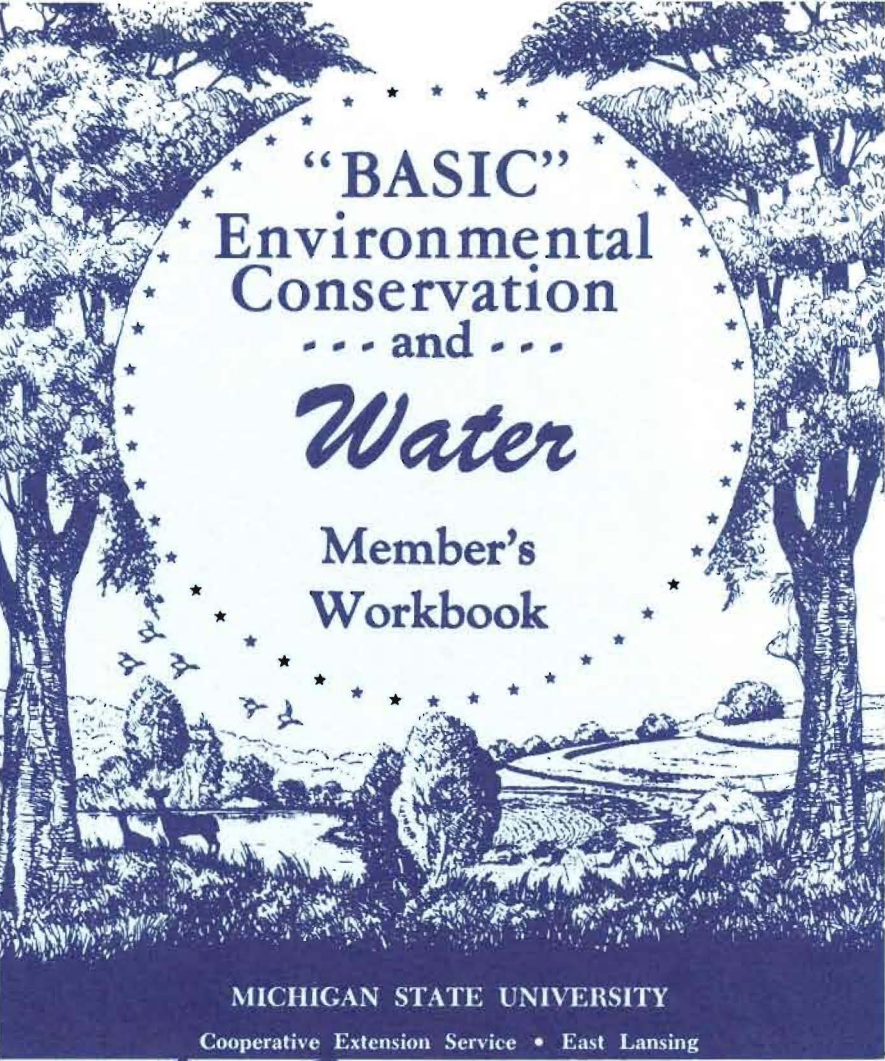
MSU Extension Publication Archive

Archive copy of publication, do not use for current recommendations. Up-to-date information about many topics can be obtained from your local Extension office.

Basic Environmental Conservation and Water - Member's Workbook
Michigan State University Cooperative Extension Service
4-H Club Bulletin
Robert George, Environmental Conservation Education
Issued June 1970
12 pages

The PDF file was provided courtesy of the Michigan State University Library

Scroll down to view the publication.



4-H—YOUTH PROGRAMS



THIS WORKBOOK BELONGS TO:

Name _____ Age _____

Address _____

CLUB _____

LEADER'S NAME _____

WHAT WE LEARN IN THIS PROJECT

This project is designed to help us understand the basic concepts of water conservation. We want to learn about the importance of water, appreciate the many uses made of water, get acquainted with what is meant by "pollution," and learn the causes of so-called water shortages.

The value of other resources such as land, forests, and wildlife (as well as our own human resources) is very dependent upon water. After completing this project, we should realize that the quality and the quantity of water we have today and tomorrow depends upon how we use and develop it. We want to appreciate water as a valuable resource. We can do this only by understanding more about it.

HOW WE LEARN IN THIS PROJECT

1. Look over the project outline. Discuss with your leader the things to do for each activity. You

need one reference: "The Wonder of Water." Be sure to get copies of it. Also, order your film at least four weeks in advance for Activity 4.

2. Get a *Member's Plan and Evaluation*, 4-H Form 210A, to help evaluate the project.

3. After previewing the project, decide on the following:

— What you are going to do for a "Special Activity."

— What you want to "Show Others," in a demonstration or talk.

— What you are going to do for an "Exhibit."

4. After your group has met three or four times, you should decide on some group activity in water conservation that would be for the betterment of your community, school, and neighborhood.

CONTENTS

	Page		Page
Activity 1, Water Sanitation Check	3	Activity 6, Primary Water Uses	8
Activity 2, Water and Agriculture	4	Activity 7, Water Quality—Special Activities ..	9
Activity 3, Field Trip	5	Activity 8, Pollution	10
Activity 4, Film	6	Activity 9, The Water Cycle	11
Activity 5, Water in Home and Industry	7		

Robert W. George
Extension Specialist
Environmental Conservation Education

Acknowledgment: — Cover pictures reproduced from *Clean Water is Everybody's Business*, courtesy U. S. Public Health Service. Zone of Saturation reproduced from *Water and the Land*, courtesy Soil Conservation Service, U. S. Department of Agriculture.



Activity 1

WATER SANITATION CHECK*

This activity is for those young people who do not have city water in their homes. Safe water is a must. Unsafe water contains some of the following hazards: Typhoid, diarrhea, internal worms, cholera. Therefore, a check of your water is important.

Water sample bottles are available from your county health office. Take the bottle home and fill it from your water supply. Make sure not to allow the top of the bottle or the bottom of the lid to touch anything because this will alter your test results. Take the bottle back to your club meeting and mail all the water samples as a group; by sending more than one in a package the postage is cheaper.

Mail the bottles to Lansing as described in the bottle instructions in cooperation with your city or county health department.

Fill in the following information:

1. Location of the well: township _____
2. Water supply: private, public, etc. _____
3. Source of the water: well, spring, other _____
4. Sampling point: well, faucet, other _____
5. Well: age _____, depth _____, diameter _____
6. Well: casing capped – YES or NO _____
7. Well distance from the septic tank _____

After you get your sample results back, fill in the blank with Safe or Unsafe.

* If you do have a city water supply, work as a group on some special site, such as your school, community center, or place where they do have a separate well. Sample and record findings as a group.

Activity 2

WATER AND AGRICULTURE

This activity has been designed to help you gain a better understanding of the importance of water and agriculture. As you should know, water is the most important element to a plant or animal.

Listed below are some animals and crops that are common water users on the farm. You are to guess the amounts used by each. After you have made a guess, your leader will supply you with the correct answers.

Items	Guess	Correct Amount
1. Corn per plant during growing season	_____	_____
2. Potato per plant during growing season	_____	_____
3. Rag weed during growing season	_____	_____
4. Tomato—1 stem during growing season	_____	_____
5. Wheat—one stalk during growing season	_____	_____
6. Dairy cow—per head per day	_____	_____
7. Beef animal—per head per day	_____	_____
8. Horse—per head per day	_____	_____
9. Sheep—ewe per head per day	_____	_____

As you can see, water plays an important part in the life of the above. Therefore care must be taken to assure an adequate water supply to each.

A part of this activity is for you to study rainfall. Your group can get a simple rain gauge for you to use. Keep track of the rainfall for a month and record it here in this book.

Month checked _____ Amount rainfall _____ Inches

In addition check with weather authorities in your area and get the amount of annual rainfall for your county _____, state _____, United States _____

From this study of water requirements and your exercise on rainfall, you should be well aware of the need of practicing good water conservation.

Activity 3

FIELD TRIP

This activity concerns a field trip by your group. Below are some suggested items to check for while on your field trip. Place a check mark by the item that you noticed.

- 1. Visit a stream and check for following:
 - a. Color of water (clean or cloudy)
 - b. Bank erosion
 - c. Water levels (change by heavy rain and melting snow)
 - d. Signs of wildlife

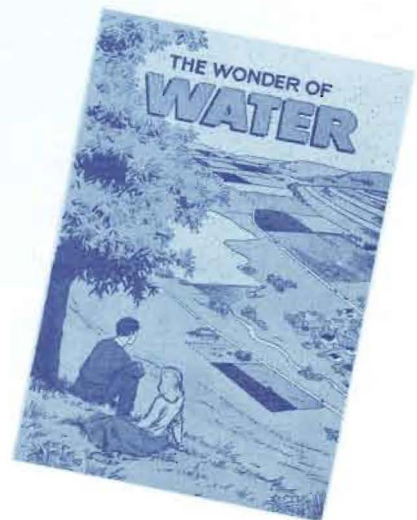
- 2. Check field after rain and note
 - a. Erosion gullies
 - b. Effects of rain drops
 - c. Did water stay or run off

- 3. Visit a forest for the following:
 - a. Leaf layer
 - b. What happens to rain after it hits ground
 - c. Effect of trees on water fall

- 4. Visit a lake or pond – check:
 - a. Kind of fish
 - b. Types of animal life present
 - c. Cleanliness of water
 - d. Value to community

In addition to the field trip read "THE WONDER OF WATER."

Available from your local Soil Conservation District or write to: Michigan Chapter, Soil Conservation Society of America, Natural Resources Building, MSU, East Lansing 48823 (20¢ per copy).



Activity 4

FILM

Show a movie on water conservation.

Name of film _____ Date shown _____

After you have seen the film do the following exercises:

List ways in which water was shown to be a Friend or Foe.

Friend	Foe
1. _____	_____
2. _____	_____
3. _____	_____
4. _____	_____
5. _____	_____

List several things shown in the film that you can do to aid water conservation.

- | | |
|----------|----------|
| 1. _____ | 4. _____ |
| 2. _____ | 5. _____ |
| 3. _____ | 6. _____ |

In addition to the film read a current article on environment and water. Find out what is being done about water management in your own community . . . your environment.



Activity 5

WATER IN HOME AND INDUSTRY

This activity has been designed to help you get a better idea of the amounts of water used in everyday life. As you will learn later, water is vital to industry as well as our own lives.

ITEMS	AMOUNTS
1. Individual use—per capita U. S.	1,300 gallons per day
2. Rural homes—water per individual	50 gallons per day
3. Electricity—per thousand kw. hr.	52,000 - 170,000
4. Ton of paper	53,000 - 80,000
5. Cane sugar per ton	4,000 - 110,000

The above quantities vary greatly according to methods used and conditions under which the check was made.

To complete this activity you are to make a study of the water that you use at your home in a single day. Measure or estimate the amounts used every time you use any water. List how the water was used, amounts used, and then the total for the day.

Record either in quarts or gallons.

USE	AMOUNT	USE	AMOUNT	USE	AMOUNT
1. _____	_____	6. _____	_____	11. _____	_____
2. _____	_____	7. _____	_____	12. _____	_____
3. _____	_____	8. _____	_____	13. _____	_____
4. _____	_____	9. _____	_____	14. _____	_____
5. _____	_____	10. _____	_____	15. _____	_____
Total _____					

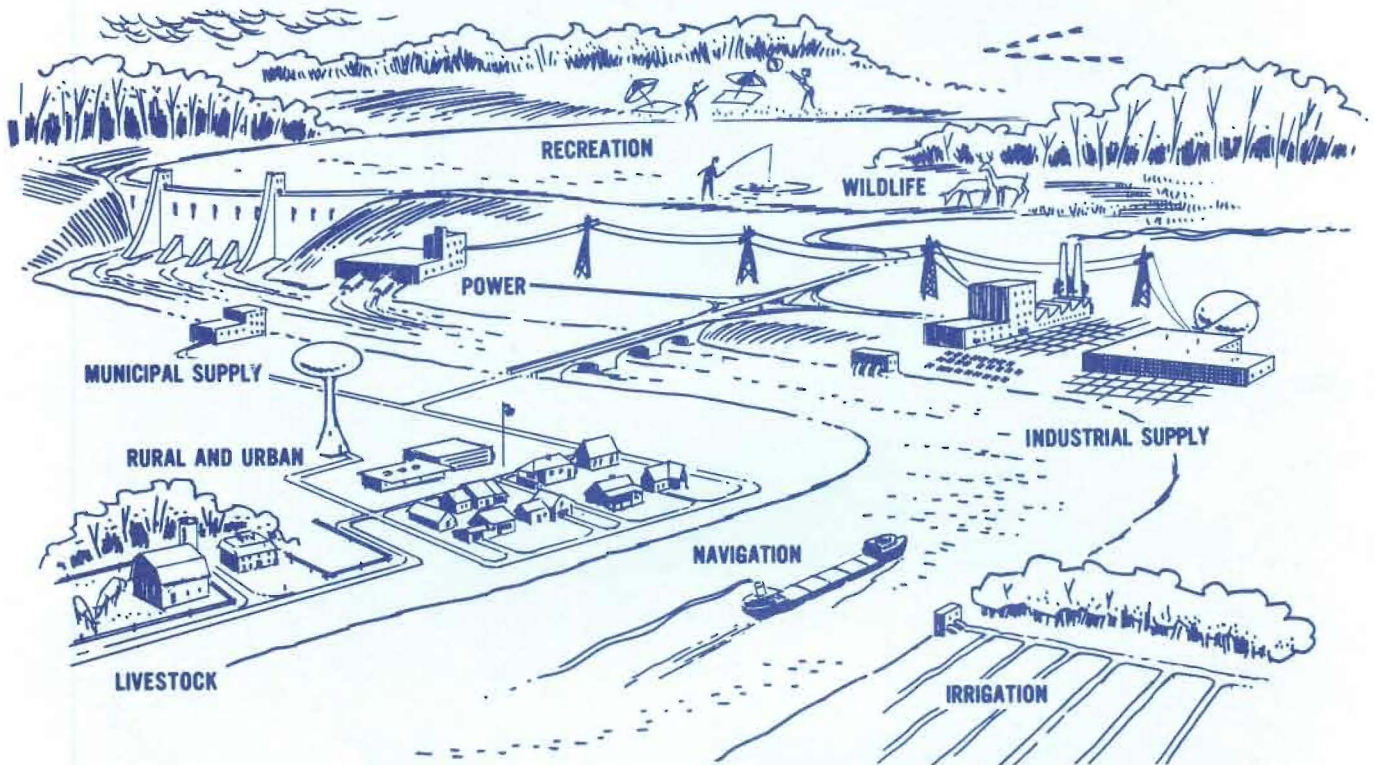
In addition to the above exercise you may want to check a leaky faucet at your home. Set a container under a leaky faucet for an hour. Measure the amount of water lost for the hour and then multiply by 24 and determine the amount lost per day. This can be done either in quarts or gallons.

Record your results: HOUR _____ quarts gallons

24 HOURS _____ quarts gallons

Activity 6

PRIMARY WATER USES



Some cities and communities have to take water from rivers that are polluted by sewage and industrial waste. They have to purify the water before it is fit for human use. How much do you think you would be willing to pay for a gallon of water? How many of these water uses do you find in your community? Do you know any people who drink water that comes from a river? Is the water in this river used for any other purposes than for drinking?

HOW WATER IS USED IN MY COMMUNITY

WATER PROBLEMS IN MY COMMUNITY

Activity 7

WATER QUALITY

In doing these activities, you have a chance to display your initiative. These are activities you may do to earn extra credit. You may do these alone or as a group.

SUGGESTED ACTIVITIES MIGHT BE (choose one):

1. Put on a demonstration (any topic connected with water and the environment).
2. Write and give a speech on water.
3. Visit a municipal water system. What is done to insure water quality?
4. Make a scale model of a water conservation activity.
5. Visit an industry and study how they use water.
6. Make a display and study of some of the living things associated with water.
7. Make and post an educational poster on water pollution.
8. Make a scrapbook on water quality.
9. Conduct a study of water-quality legislation and problems of pollution.
10. Complete any additional activity you can think of related to water quality and the environment.

REPORT ON YOUR SPECIAL ACTIVITY IN A BRIEF PARAGRAPH IN SPACE BELOW.



Giving a Demonstration . . .

Activity 8

POLLUTION

In any community, environment determines the goods and services that are produced. The quality and quantity of our water does make a difference. Water pollution is sometimes responsible for the shortage of our water resources – as it supplies our needs for food, recreation, and life.

WHAT IS POLLUTION

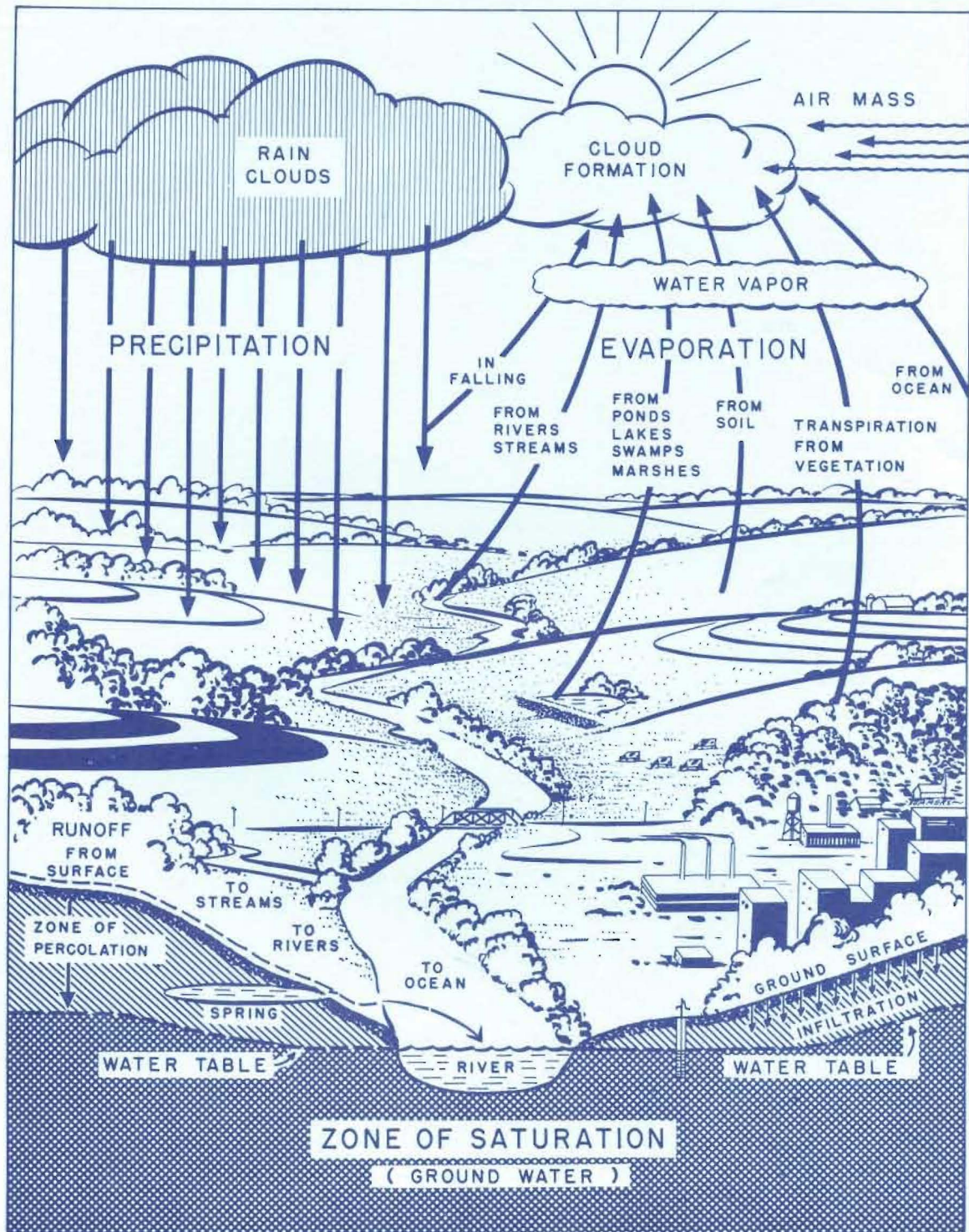
Compare water samples taken from different sources, such as: faucet, pond, road ditch, rain water. Place a small amount of water from each sample in a flat dish. Examine with a microscope. Let stand for 24 hours and for 48 hours. After the samples evaporate, look at the dishes. Discuss and answer the following:

1. What do we mean by “polluted” water?
2. Why is some of our water not fit for use?
3. Who is responsible for what happens to water after it falls to the ground?

Activity 9

WATER CYCLE

Below is a picture of the water cycle or "hydrologic-cycle." Many important phases of the cycle are shown. Learn about the different phases of the hydrologic-cycle. Discuss them as a group or club. This sketch may also be colored to emphasize certain things that are the most important in your community.



ENVIRONMENTAL CONSERVATION

CREED

I pledge myself, as a responsible human, to assume my share of man's stewardship of our natural resources.

I will use my share with gratitude, without greed or waste.

I will respect the rights of others and abide by the law.

I will support the sound management of the resources we use,
the restoration of the resources we have despoiled,
and the safekeeping of significant resources for posterity.

I will never forget that life and beauty, wealth and progress depend on how wisely man uses these gifts . . . the soil, the water, the air, the minerals, the plant life, and the wildlife. This is my pledge!