

Stormwater Activity Book

Hi, I'm Droplet.
Have fun learning
how to keep our
streams clean.



A state-wide education
program conducted by:
The Alabama Department
of Environmental Management



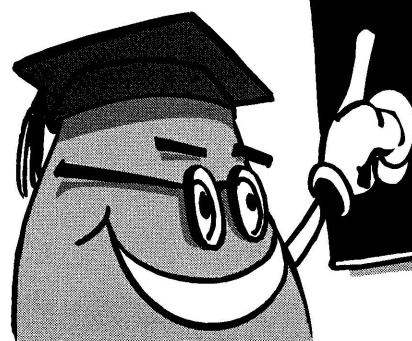
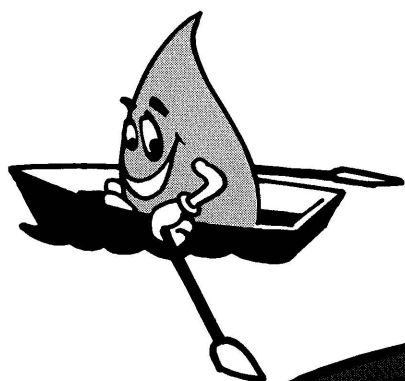
The Dirty Dozen

When stormwater carries pollutants from thousands of Alabama homes into gutters, it adds up to a big problem for our streams and rivers. Hidden in the puzzle below are a dozen common stormwater contaminants from household sources.

Can you find and circle all 12?



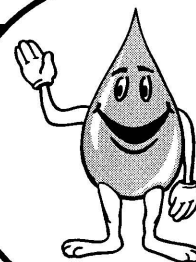
1. Paint
2. Oil
3. Antifreeze
4. Dirt
5. Leaves
6. Grass clippings
7. Pet waste
8. Pesticide
9. Herbicide
10. Fertilizer
11. Trash
12. Car wash water



Did You Know...

The average annual rainfall in Alabama is approximately 57 inches.

Pollution Solution Quiz



The Problem...

The left-hand column below contains pollutants that will harm streams and rivers if they enter storm drains. On the right is a list of the harmful effects the pollutants can cause. Can you match each pollutant with its undesirable effect?

- | | |
|----------------------------|--|
| 1) Motor Oil | A) Accelerates growth of aquatic plants, which rob water of oxygen when they decay. |
| 2) Pet Waste | B) "Killer" chemicals that pose serious human and environmental health risks. |
| 3) Anti-freeze | C) Can contain lead, which is highly toxic to people and animals. |
| 4) Paint | D) This radiator fluid is poisonous to plants and animals, and seriously depletes oxygen in water. |
| 5) Pesticides & Herbicides | E) A single quart of this lubricant will contaminate two million gallons of drinking water. |
| 6) Plastic | F) Takes centuries to biodegrade; harmful to animals that try to eat it. |
| 7) Fertilizer | G) Clogs storm drains and depletes oxygen in streams when it decays. |
| 8) Yard Waste | H) Releases bacteria and other harmful materials into streams. |

The Solution...

Can you match the pollutants in the left-hand column with the appropriate pollution solution? Some solutions are appropriate for more than one pollutant.

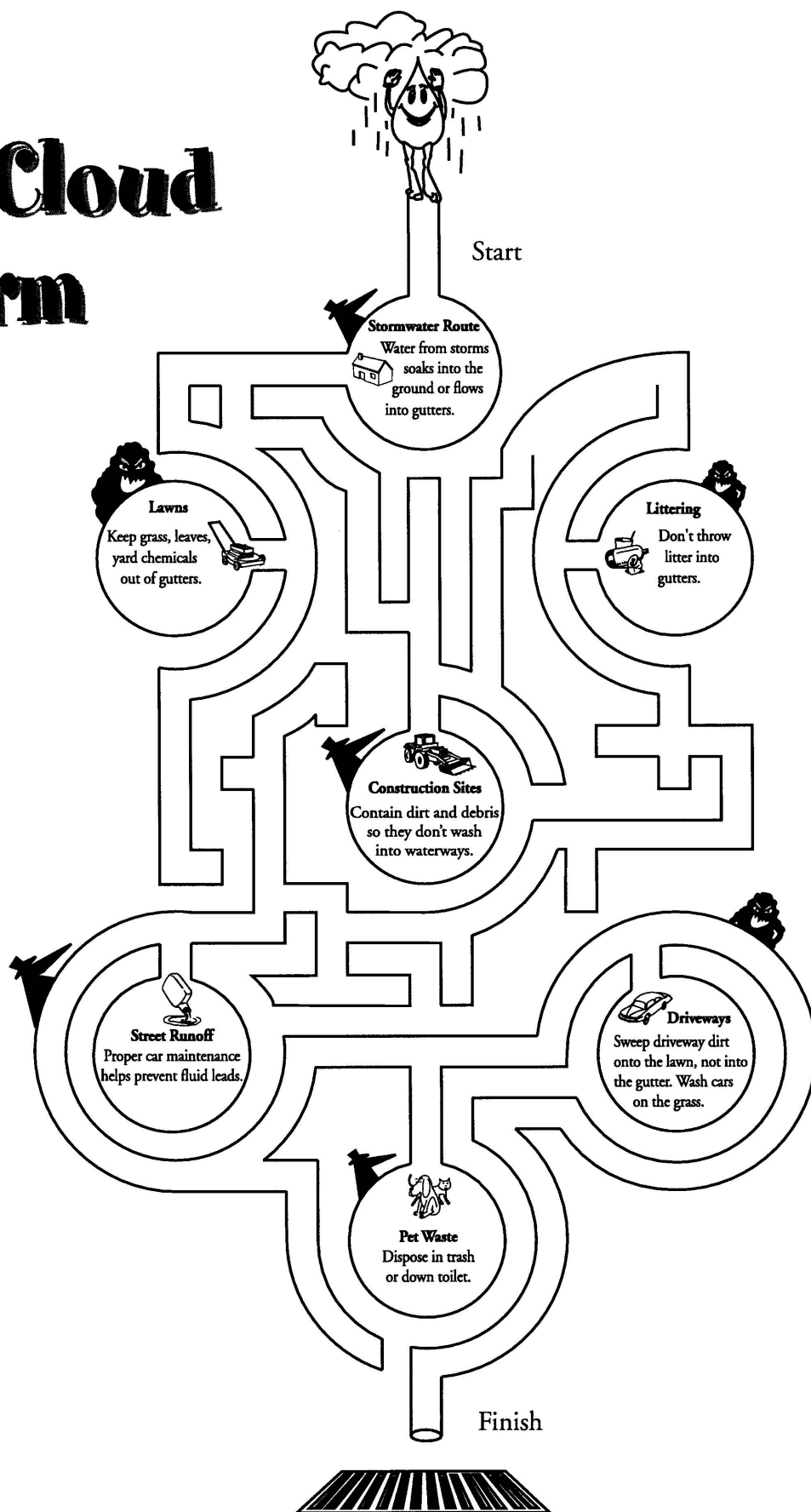
- | | |
|----------------------------|--|
| 1) Motor Oil | A) Compost or bag and deposit in trash. |
| 2) Pet Waste | B) Take to a Household Hazardous Waste Facility, or share unused portions with others. |
| 3) Paint | C) Recycle or put in trash. |
| 4) Anti-freeze | D) Bag and deposit in trash or flush down toilet. |
| 5) Pesticides & Herbicides | E) Don't over apply; clean up excess. Never hose into gutter. |
| 6) Plastic | F) Recycle at recycling centers specializing in car products, or take to a Household Hazardous Waste Facility. |
| 7) Fertilizer | |
| 8) Yard Waste | |



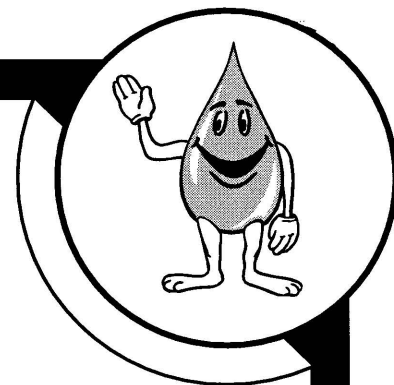
From Storm Cloud To Storm Drain

The stormwater system channels rain into gutters, which drain into streams and rivers. When people pollute stormwater, they also pollute our natural waterways.

Help Droplet journey through the stormwater system without becoming contaminated by Sludge or Toxic.



Words of Warning

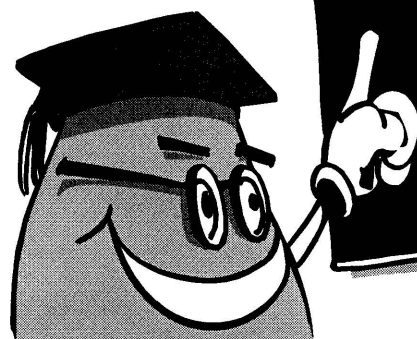


Chemicals can turn lawns green, give floors sheen, and keep ovens clean. But if not disposed of properly, some household chemicals also can be very harmful to the environment.

Hidden in the puzzle below are 15 words associated with household hazardous wastes. Can you find and circle all 15?

S	E	W	O	N	O	S	I	O	P	E	S
A	D	E	T	N	E	V	L	O	S	E	N
C	I	D	E	L	L	O	X	E	L	D	I
I	C	I	N	G	I	F	P	B	R	X	T
T	I	C	A	C	J	O	A	Y	O	O	N
S	B	I	D	H	O	M	T	I	E	N	E
U	R	G	R	M	M	C	D	D	T	B	P
A	E	N	O	A	C	Z	L	E	H	J	R
C	H	U	L	R	L	L	E	U	F	I	U
E	F	F	H	Q	D	Y	A	E	O	D	T
E	D	I	C	I	T	C	E	S	N	I	T

- | | |
|---------------|-----------------|
| 1. Paint | 10. Dioxin |
| 2. Flammable | 11. Caustic |
| 3. Herbicide | 12. DDT |
| 4. Chlordane | 13. Insecticide |
| 5. Turpentine | 14. Lye |
| 6. Oil | 15. Fuel |
| 7. Fungicide | |
| 8. Poison | |
| 9. Solvent | |

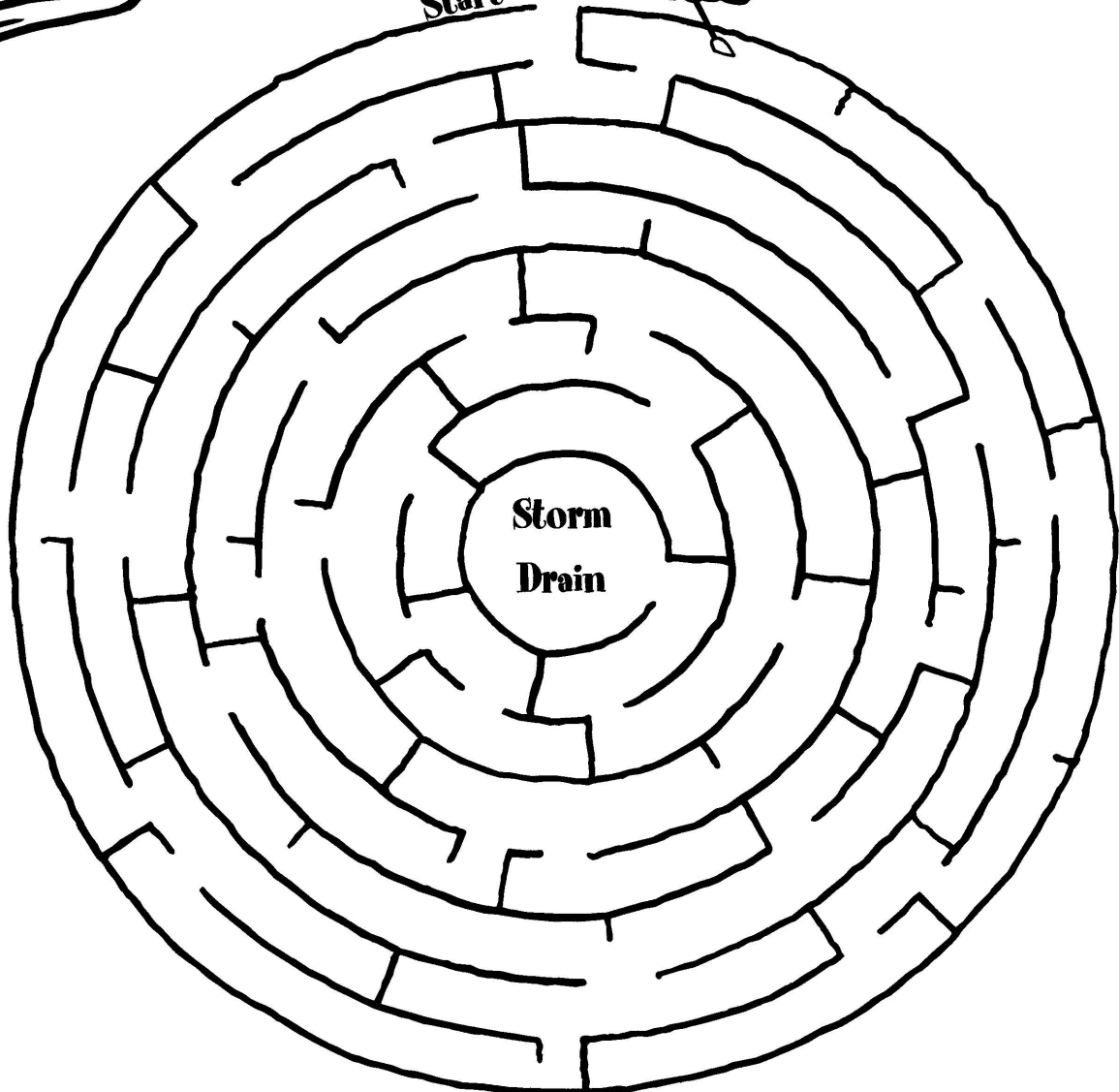
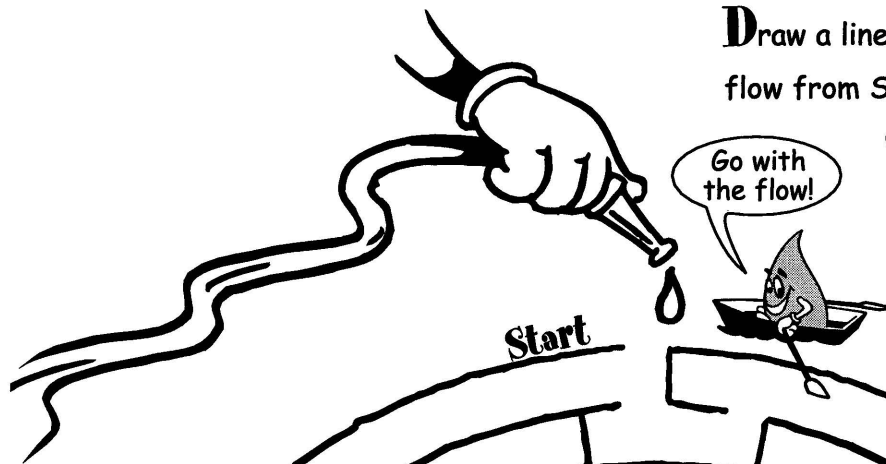


Did You Know...

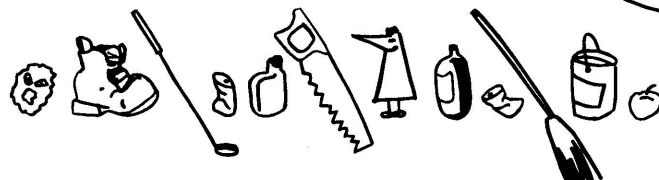
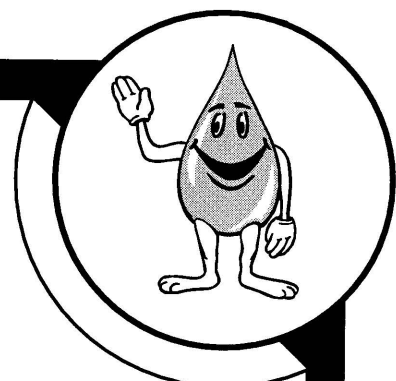
The average household generates up to 20 pounds of hazardous waste a year.

Stormwater Maze

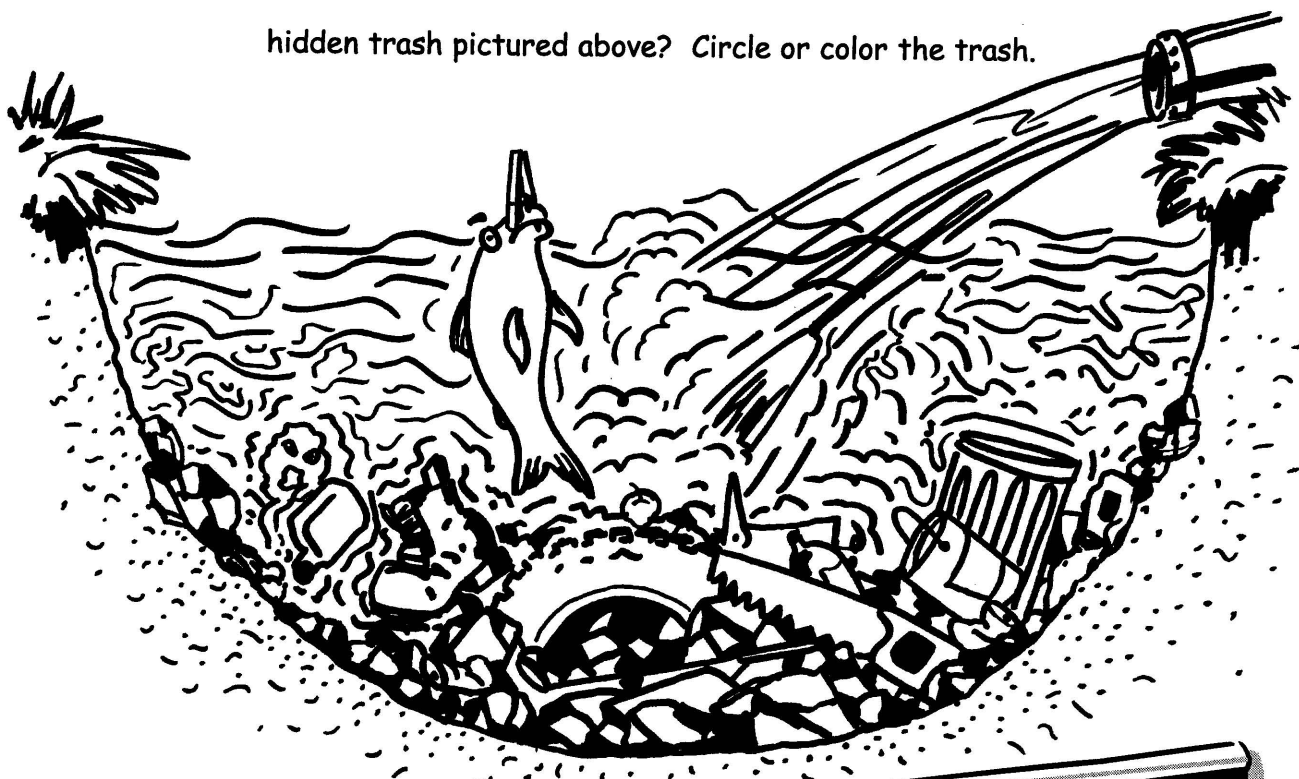
Draw a line showing how water could flow from **START** to **STORM DRAIN** without crossing any lines.



Eliminating Trash From Our Streams

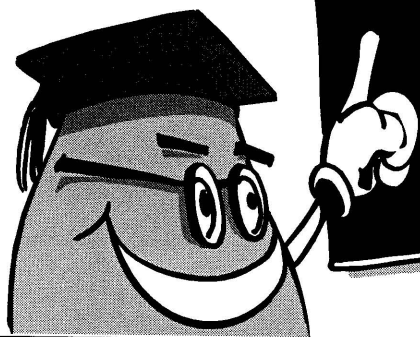


Help Droplet clean this stream. What doesn't belong? Can you find all of the hidden trash pictured above? Circle or color the trash.

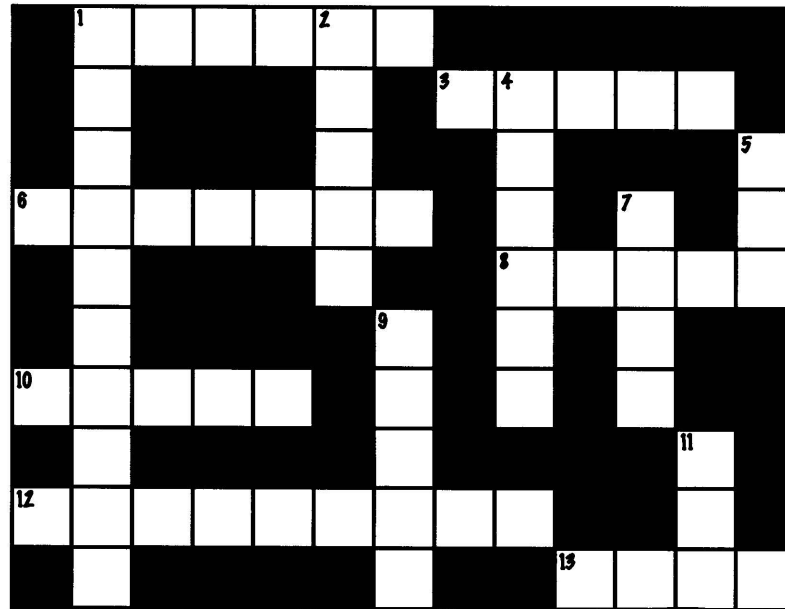


Did You Know...

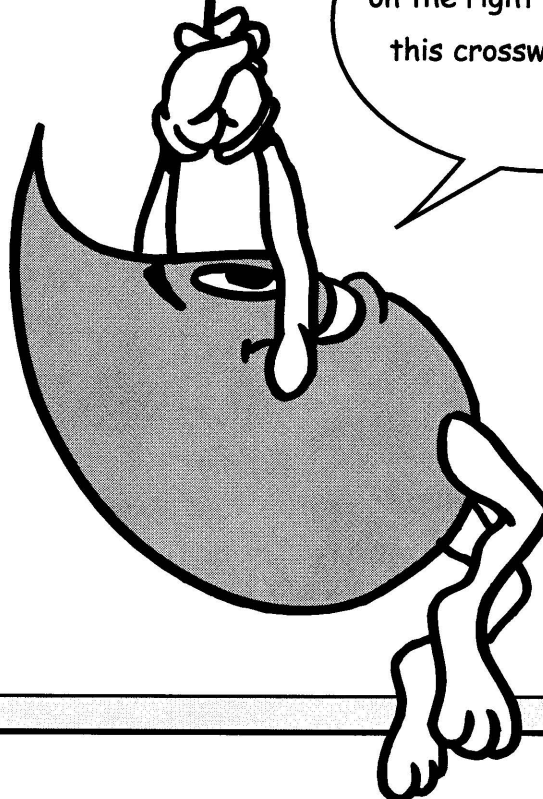
About 75 percent of the Earth's surface is covered with water, but less than 1 percent of it is fresh water available for human use (most fresh water is locked up in glaciers and polar ice).



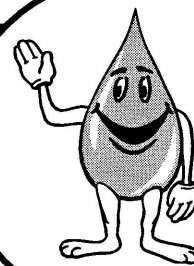
Stormwater



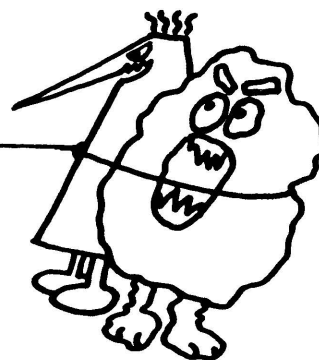
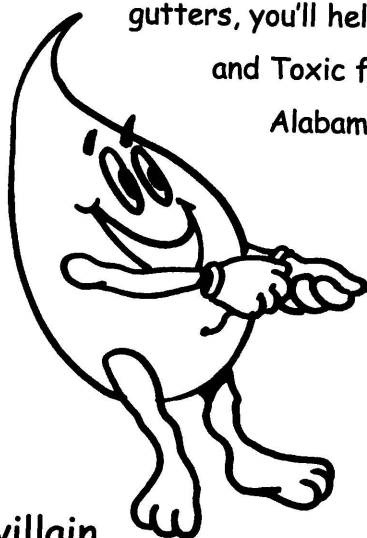
Use the clues
on the right to help solve
this crossword puzzle.



Words



By keeping pollutants out of the gutters, you'll help Droplet prevent Sludge and Toxic from contaminating Alabama's waterways.



Across

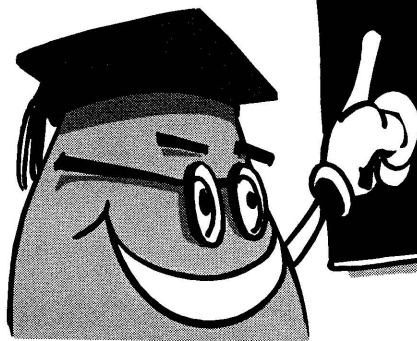
1. Dirty villain
3. Poisonous villain
6. Clean water hero
8. Lawn plant
10. Coloring fluid
12. Destroys pests
13. White precipitation

Down

1. Water from storms
2. Leafy color
4. Gas animals breathe
5. Short for gasoline
7. Freshwater _____
9. Water down the _____
11. Chemical symbol for water

Did You Know...

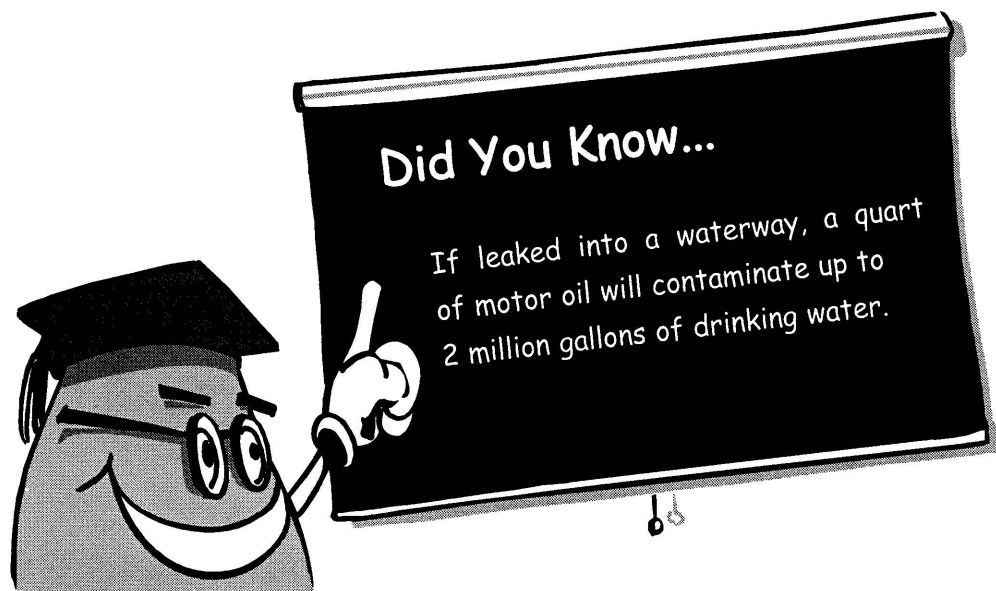
It is illegal to dump household hazardous waste, such as oil, into gutters or down storm drains.



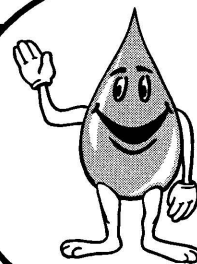
Fill in the Blanks

Complete each sentence by writing the correct word in the blank. You'll find a clue to each answer in the "Did You Know?" section on the page number shown in parentheses.

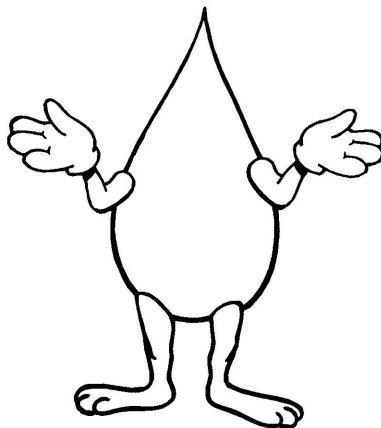
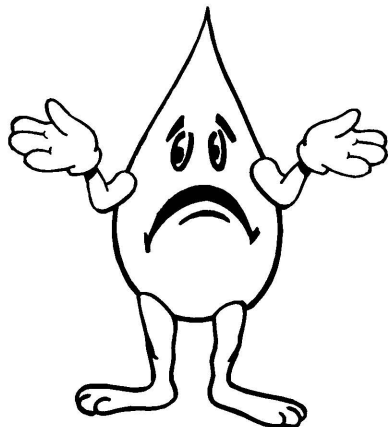
1. In Alabama, the average annual rainfall is _____ inches.
(Page 2)
2. The average household generates up to ____ pounds of hazardous waste a year. (Page 5)
3. Less than ____ percent of the Earth's water is fresh water available for human use. (Page 7)
4. It is illegal to dump household hazardous waste, such as oil, into _____ or down storm drains. (Page 9)
5. A quart of motor _____ can contaminate up to 2 million gallons of drinking water. (Page 10)
6. More than _____ gallons of water can be wasted from a leaky faucet each day. (Page 13)
7. _____ water is the largest source of water supply for most Alabamians. (Page 14)



Drawing Droplet



Look at the Droplets on the left, then draw matching SAD, HAPPY and ANGRY faces on the Droplets in the middle column. Then, using your knowledge about Droplet, answer the questions on the right. One possible answer to each question is already provided. Can you think of more answers? Have fun!

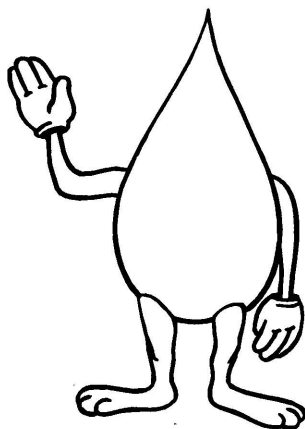
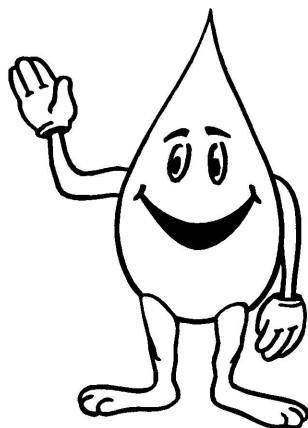


What makes Droplet sad?

A) Fertilizer in storm drains

B) _____

C) _____

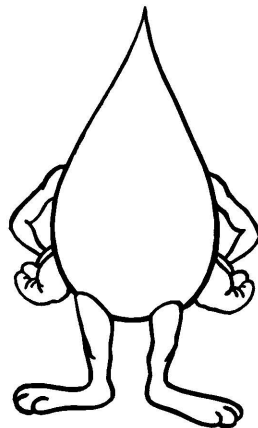
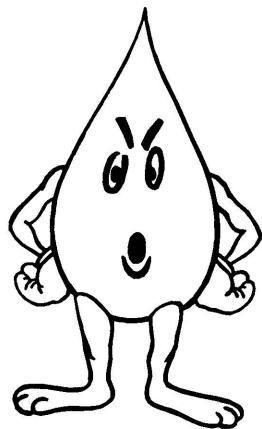


What makes Droplet happy?

A) Recycling

B) _____

C) _____



Who makes Droplet angry?

A) Toxic

B) _____

C) _____

Hunting Hazardous Wastes

Toxic and Sludge lurk in containers of paint, solvents, lawn chemicals, and other hazardous products stored in your garage, basement or kitchen.



Toxic

In the illustration below, 4 Sludges and 8 Toxics are hiding on the shelf. Can you find all of them?

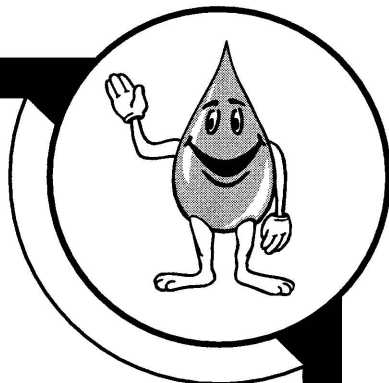
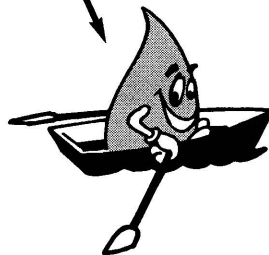
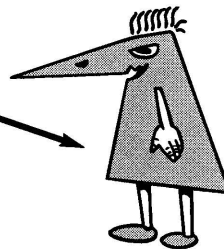
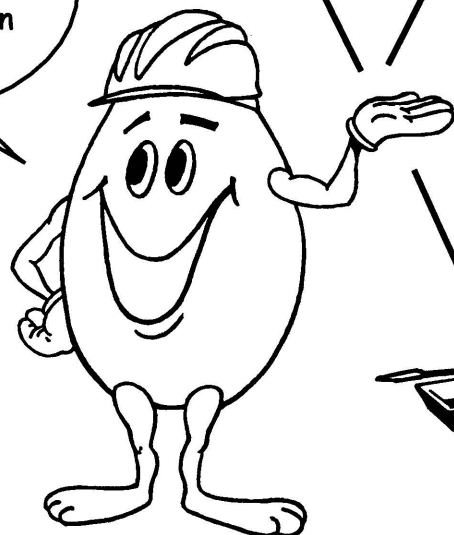


Sludge



Find the Pictures

Can you find each of these pictures at another place in this book?



Did You Know...

The small drop from a leaky faucet can waste over 50 gallons of water a day.

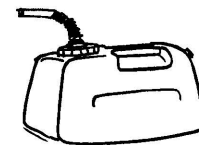
Complete the Word

To complete each of these words, look at the picture clue and write the word for that picture in the blanks.



1 _ _ _ E _

2 _ _ E _



3 _ _ _ _ E

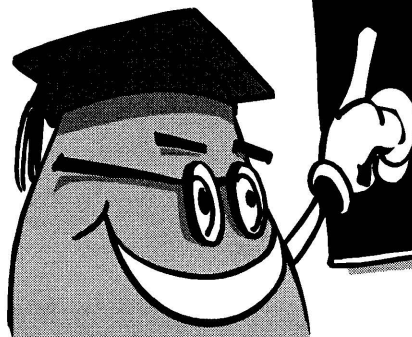
4 _ E _ _ E _



5 _ _ _ _ E _

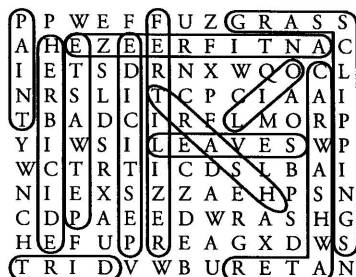
Did You Know...

Surface water is the largest source of water supply for most Alabamians.



Answers

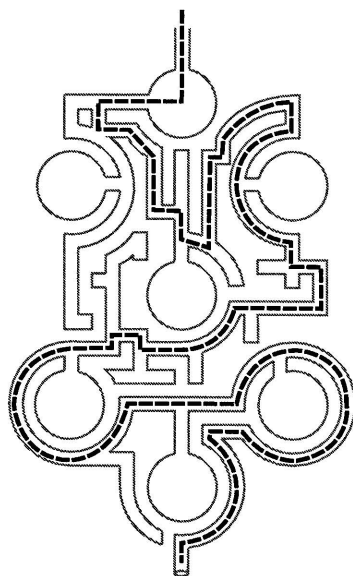
Page 2



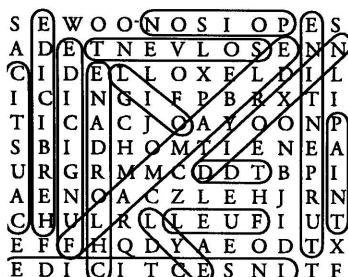
Page 3

The Problem	The Solution
1. E	1. F
2. H	2. D
3. D	3. B
4. C	4. F
5. B	5. B
6. F	6. C
7. A	7. E
8. G	8. A

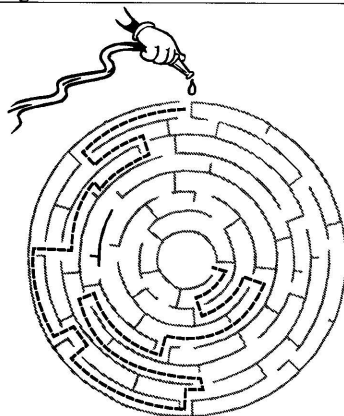
Page 4



Page 5



Page 6



Page 8

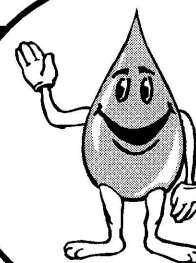
Across	Down
1. Sludge	1. stormwater
3. Toxic	2. green
6. Droplet	4. oxygen
8. grass	5. gas
10. paint	7. Lake
12. pesticide	9. drain
13. snow	11. H2O

Page 10

1. 57; 2. 20; 3. 1; 4. gutters;
5. oil; 6. 50 and gardens;
7. surface

Page 14

1. water; 2. fuel; 3. Sludge;
4. leaves; 5. Droplet





WE ALL LIVE DOWNSTREAM



This manual has been adapted for use by Alabama Department of Environmental Management. It was originally prepared by the Salt Lake County, Utah, Public Works Department Engineering Division.



This project was funded or partially funded by the Alabama Department of Environmental Management through a Clean Water Act Section 319(h) nonpoint source grant provided by the U.S. Environmental Protection Agency - Region IV.