

# STORMWATER THE BOOK



CITY OF ORANGE		ORANGE COUNTY DRAINAGE DISTRICT		CITY OF VIDOR
CITY OF BRIDGE CITY		CITY OF PINEHURST		CITY OF WEST ORANGE
<b>ORANGE COUNTY</b>				
STORMWATER QUALITY COALITION				

# WHERE DOES ALL THE WATER GO?



Whenever it rains or snows, water runs off the land and into our storm drain system. The storm drain system is made up of gutters, storm drains (the holes in the curb) and pipes. The water that runs off the land is called **stormwater**. The storm drain system carries the stormwater to local waterways. The water that runs off into the storm drain system never passes through a water treatment plant, so anything the stormwater picks up, or is placed in it along the way, will be carried **UNTREATED** to the nearest waterway.

# WHO LIVES IN A WATERSHED?

A watershed is the land that water flows across or under on its way to a stream, river, lake, or ocean. Water runs to the lowest point in the watershed.

At the bottom of the page, list the animals in this picture that live in a watershed.



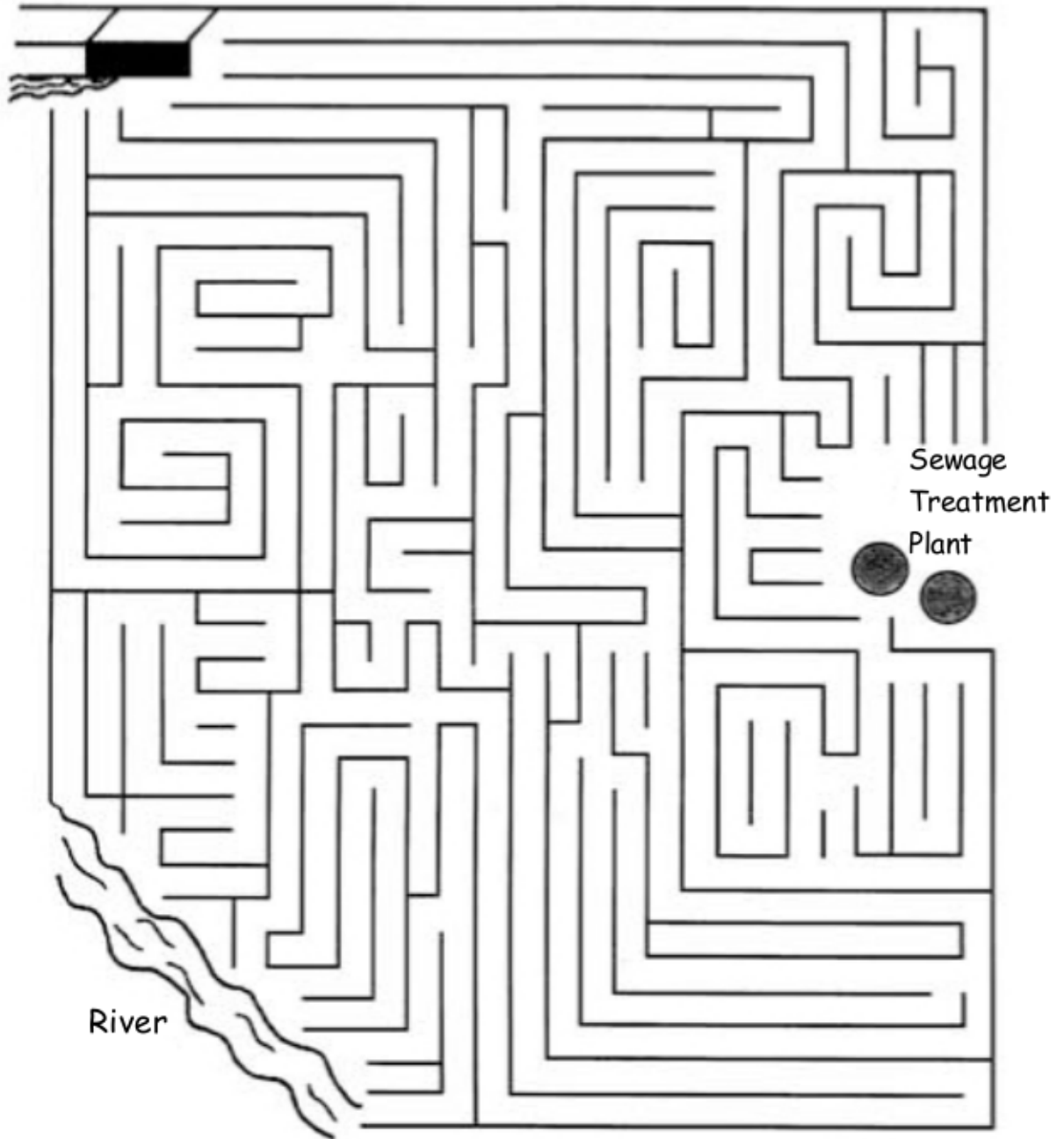
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# THE A-MAZING STORMWATER STORY

Everyone knows that water flows. But who knows where the water goes? Follow the gutter water through the storm drain system to find out.



Does gutter water go to the sewage treatment plant or to the river? \_\_\_\_\_

# STORMWATER POLLUTION

The untreated water in the storm drain system can carry pollutants to nearby waterways. Things that are put on the ground can be washed into our storm drains by rain or overwatering our yards. When carried by stormwater, pollutants, such as motor oil and antifreeze from cars, fertilizers and pesticides on our lawns and gardens, pet waste, paint, trash, and soap can end up in the waterways, making the animals that live there very sick. Even things like soil and leaves can be pollutants -- they clog storm drains and choke up our waterways. Sometimes, people who don't know that stormwater isn't treated dump or deliberately wash pollutants directly into the storm drains. Of course, you, Croaker and Stormy know where all these pollutants go.





# FIND THE POLLUTANTS



Stormy has found many pollutants in the stream in which he lives. All of these pollutants were carried to the stream in the stormwater and are mentioned on page 4. Can you find the stormwater pollutants in the box above? Some words may be backwards. When you find them, write the words in the space provided.

1) \_\_\_\_\_

6) \_\_\_\_\_

2) \_\_\_\_\_

7) \_\_\_\_\_

3) \_\_\_\_\_

8) \_\_\_\_\_

4) \_\_\_\_\_

9) \_\_\_\_\_

5) \_\_\_\_\_

10) \_\_\_\_\_

# FROM YOUR HOME TO OURS



Pollution in our neighborhood can travel to local streams and rivers through the storm drain system. Below is a list of steps in this polluting process, but the steps are out of order. Write out the steps on the lines provided in the order that they would normally occur, with number one being the first step and number five being the last step.



The storm drain carries the polluted stormwater to the stream.



1. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Paint and other pollutants are left outside.



2. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Fish and other animals that live in the stream get sick and might die.



3. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Rain water washes over the pollutants and carries them into the street.



4. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Polluted rain water flows down the street and into the storm drain.



5. \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

# WATER POLLUTION AFFECTS...

Unscramble the words below to find out who is harmed by water pollution.



HIFS \_\_\_\_\_

SRBDI \_\_\_\_\_

LEEPOP \_\_\_\_\_

USKDC \_\_\_\_\_

GOFRS \_\_\_\_\_

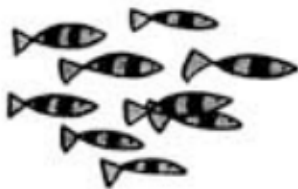
LMNAISA \_\_\_\_\_

OYU \_\_\_\_\_

NLTAPS \_\_\_\_\_

GUSB \_\_\_\_\_

YREVNOEE \_\_\_\_\_





# HELPING TO KEEP GUTTERS CLEAN

There are lots of ways you can help prevent stormwater pollution and keep your water (and our home!) clean. You can help by:

- 1) placing litter in trash cans and recycling materials, such as aluminum, paper, and plastic bottles;
- 2) picking up pet waste and putting it in the trash;
- 3) washing the family car in an area that doesn't run off to a storm drain, such as your lawn or the car wash;
- 4) watering the lawn for shorter periods of time so that water doesn't run off; and;
- 5) rake or sweep up grass, leaves and twigs from your yard, rather than hosing it away or using a leaf blower.

The plant material you collect can be used to make compost.

You can get your parents to help too! Tell them that things like paint, antifreeze and chemical cleaners need to be taken to a household hazardous waste collection facility. Also, ask them to repair any leaks their cars have and to recycle used motor oil and filters.



# LEND A HELPING HAND

To help prevent stormwater pollution, Stormy puts recyclables in the recycle bin and litter in the trash can.

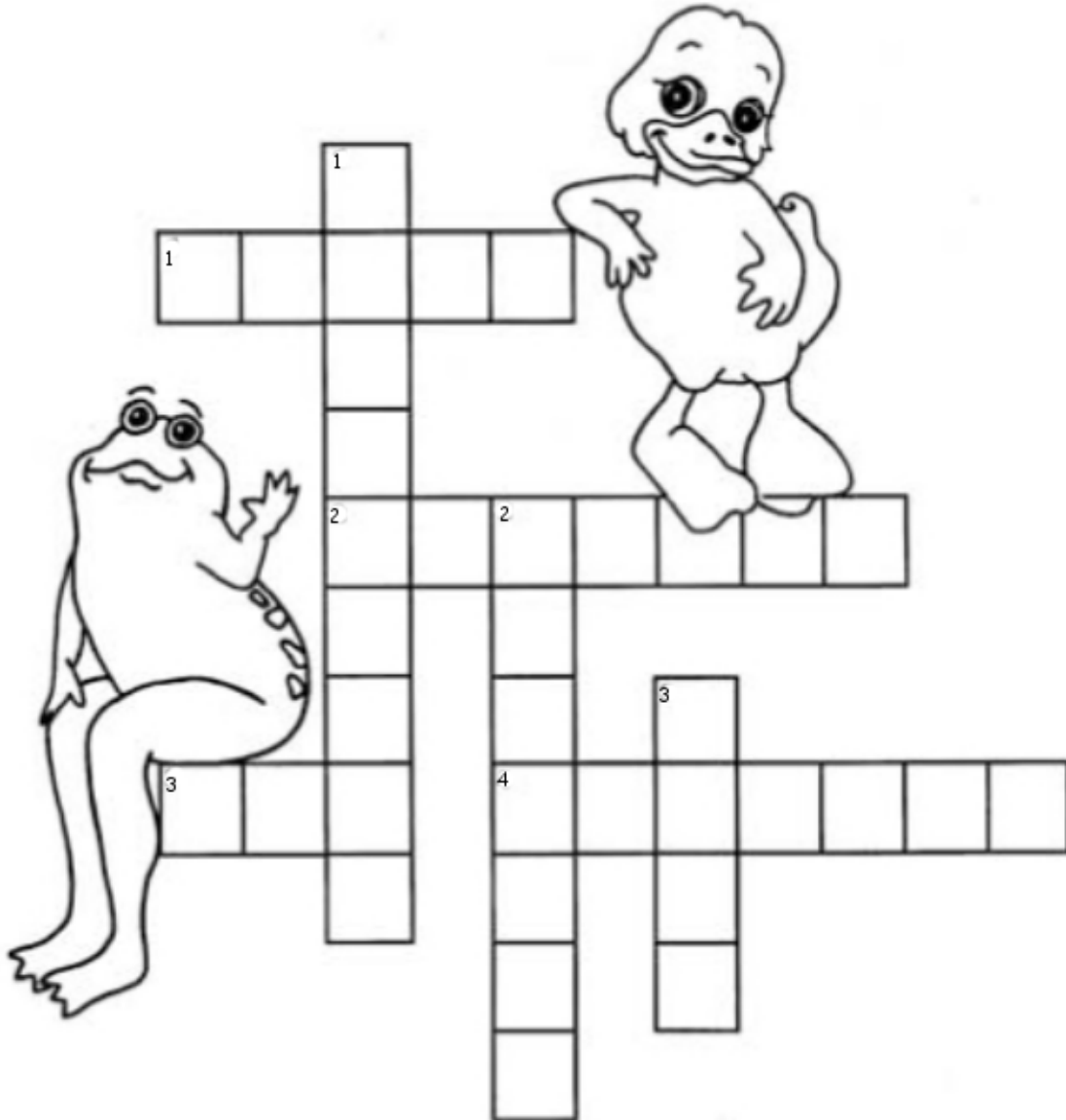
Write the appropriate words from the recycle bin in the blanks to find out what else you can do to prevent pollution.



1. \_\_\_\_\_ the driveway instead of hosing debris into the street.
2. \_\_\_\_\_ pet waste and put it in the trash rather than leave it lying on the ground.
3. \_\_\_\_\_ run off, water the lawn for shorter periods of time.
4. Ask your parents to \_\_\_\_\_ used motor oil.
5. \_\_\_\_\_ the car on the lawn or at the car wash, so soap, dirt and oil don't end up in the storm drain.
6. \_\_\_\_\_ by composting yard debris, such as grass clippings, leaves and twigs, and use the compost in your garden.
7. \_\_\_\_\_ Your parents that left over paint and antifreeze need to be taken to a house-hold hazardous waste collection facility.

# CLEAN WATER CROSSWORD

Decide what words belong in the boxes by reading the clues.



## ACROSS

- 1.** The place litter and pet waste belongs.
- 2.** What you should do with used motor oil and filters.
- 3.** Who can help prevent stormwater pollution?
- 4.** You can recycle \_\_\_\_\_ bottles.

## DOWN

- 1.** Left over paint, antifreeze and household cleaners are \_\_\_\_\_ wastes, and should be taken to a collection facility.
- 2.** You can make it out of yard clippings.
- 3.** Where, at home, you can wash the car without having soap, dirt and oil flowing to the storm drain.

**WITH YOUR HELP, WE CAN  
KEEP GUTTERS CLEAN  
FOR THOSE  
DOWNSTREAM!**

CROAK!  
For more  
information on stormwater,  
go to  
[ms4web.com/orange](http://ms4web.com/orange)

For the answer  
to the activities  
look below.



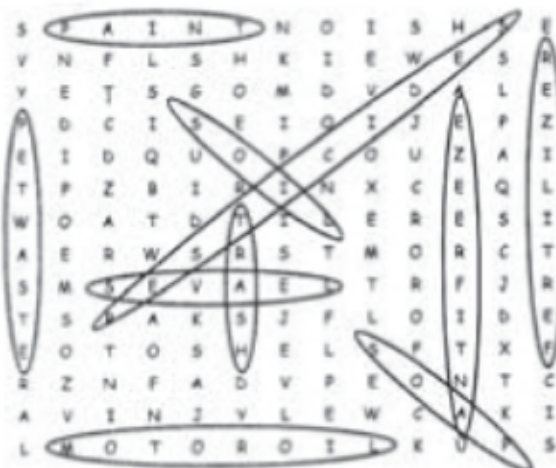
**Page 2**

Everyone lives in a watershed, so you should have listed all of the animals (people included!).

**Page 3**

The stormwater goes straight to the river, it does not go to the water treatment plant to be cleaned.

**Page 5**



PAINT  
PETWASTE  
PESTICIDES  
SOIL  
TRASH  
LEAVES  
MOTOROIL  
SOAP  
ANTIFREEZE  
FERTILIZER

**Page 6**

1) paint and other pollutants are left outside. 2) Rain water washes over the pollutants and carries them in to the street. 3) Polluted rain water flows down the street and into the storm drain. 4) The storm drain carries the polluted stormwater to the stream. 5) Fish and other animals that live in the stream get sick and might die.

**Page 7**

Fish, Birds, People, Ducks, Frogs, Animals, You, Plants, Bugs, Everyone

**Page 9**

1) Sweep, 2) Pick up, 3) Prevent, 4) Recycle, 5) Wash, 6) Reduce Waste, 7) Tell

**Page 10**

Across: 1) Trash, 2) Recycle, 3) You, 4) Plastic

Down: 1) Hazardous, 2) Compost, 3) Lawn