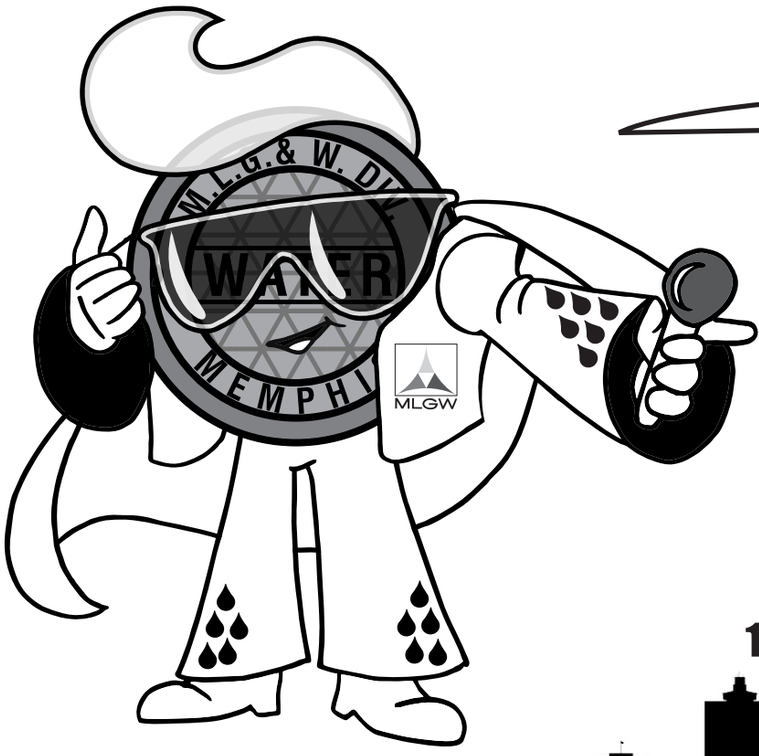

WATER
MANE
M.L.G.& W. DIV.
WATER
MEMPHIS
MLGW
Super Water Conservation Activity Book

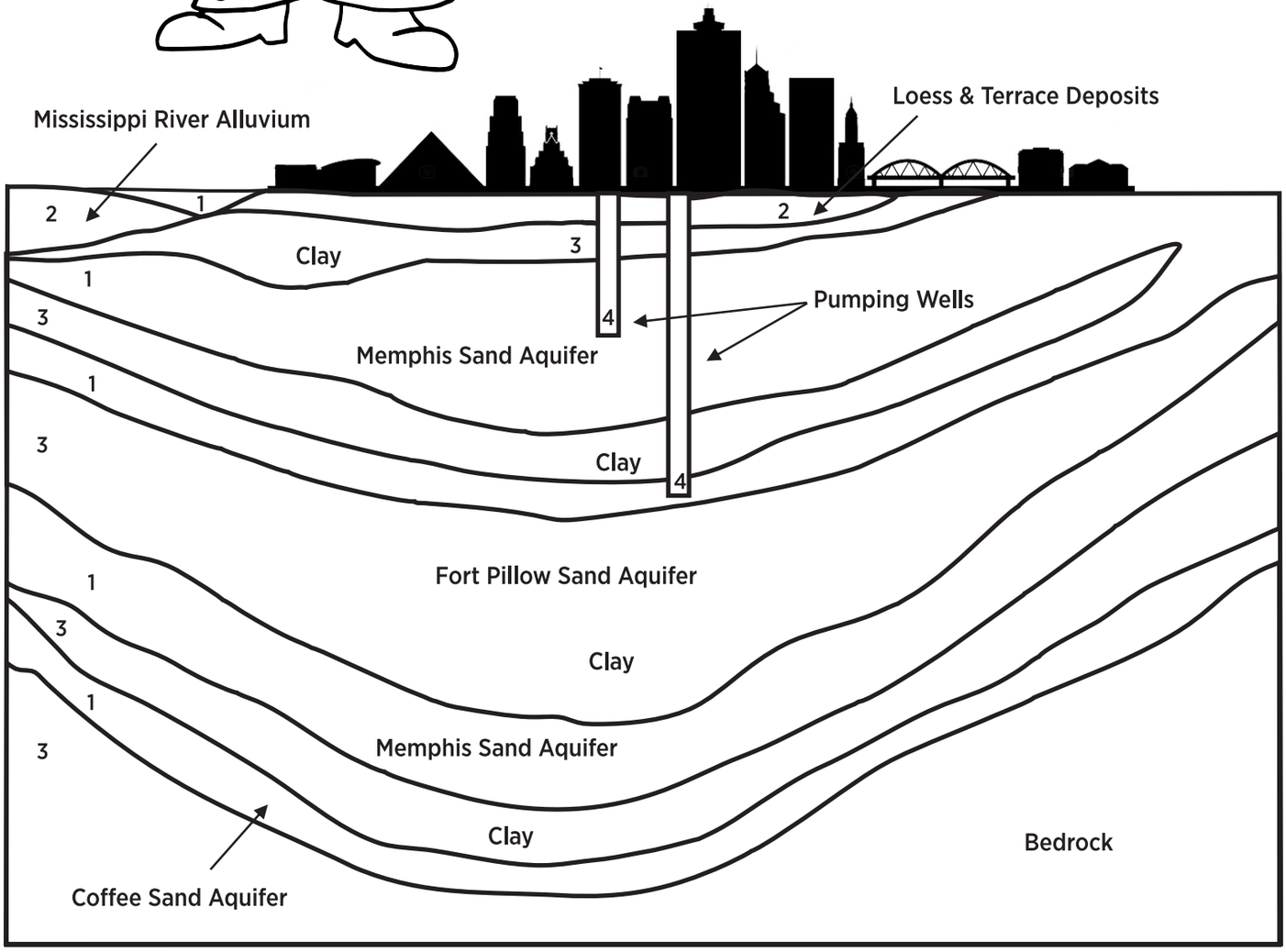

Hi Kids! I'm Water Mane!
I'm going to teach you about protecting the aquifer
and water conservation by doing some super fun activities.
Water conservation is the practice of
using water efficiently to reduce unnecessary water usage.
Water conservation is important because fresh, clean
water is a limited resource, as well as a costly one.
M.L.G.& W. DIV.
WATER
MLGW



The aquifer system with its artesian wells is one of Memphis' greatest natural resources, providing an abundant supply of pure water. In fact, Memphis is the largest city in the world to rely solely on artesian wells for its water supply.

Color in the diagram of the Memphis Aquifer below:

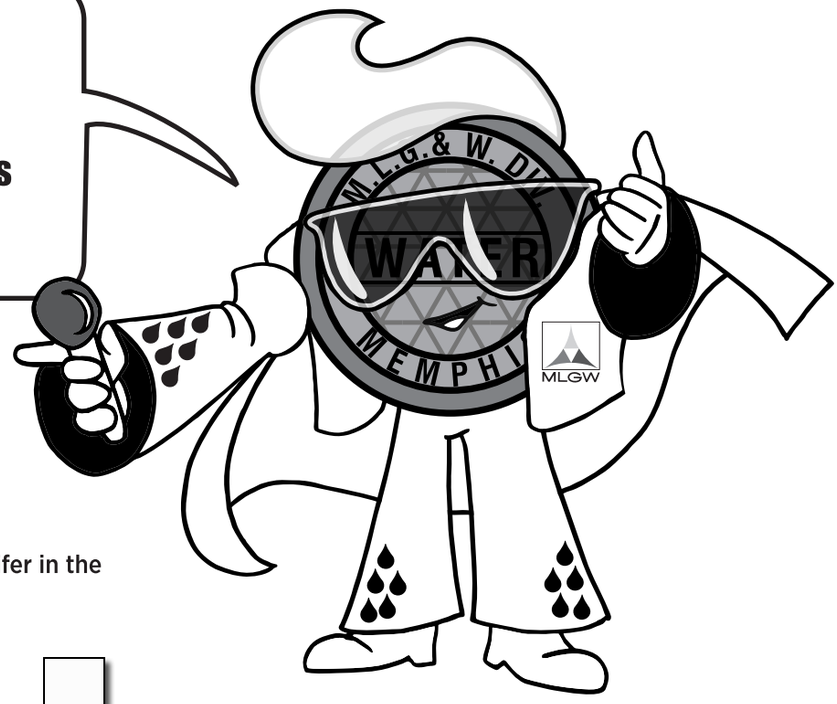
1=blue 2=brown 3=tan 4=grey



The water in your glass may have come from the faucet, but its journey began in the sky more than 2,000 years ago. The water that flows from your tap is collected from the skies that falls in the form of rain and snow. Our water comes primarily from an underground aquifer known as the Memphis Sand Aquifer. The reservoir is located 350 to 1,100 feet below ground. The sand acts as a natural filter removing many impurities from the water.

Understanding the
Aquifer!

Use the bold vocabulary words below to fit into the crossword squares.



Aquifer – Natural underground reservoir which contains groundwater.

Coffee Sand Aquifer – Deepest aquifer in the Mississippi Embayment.

Fort Pillow Sand Aquifer – Second deepest aquifer in the Mississippi Embayment.

Groundwater – Water contained in natural underground reservoirs.

McNairy Sand Aquifer – Third deepest aquifer in the Mississippi Embayment.

Memphis Sand Aquifer – First aquifer in the Mississippi Embayment. Serves as Memphis' primary water source with an estimated content of 100 trillion gallons of pure water.

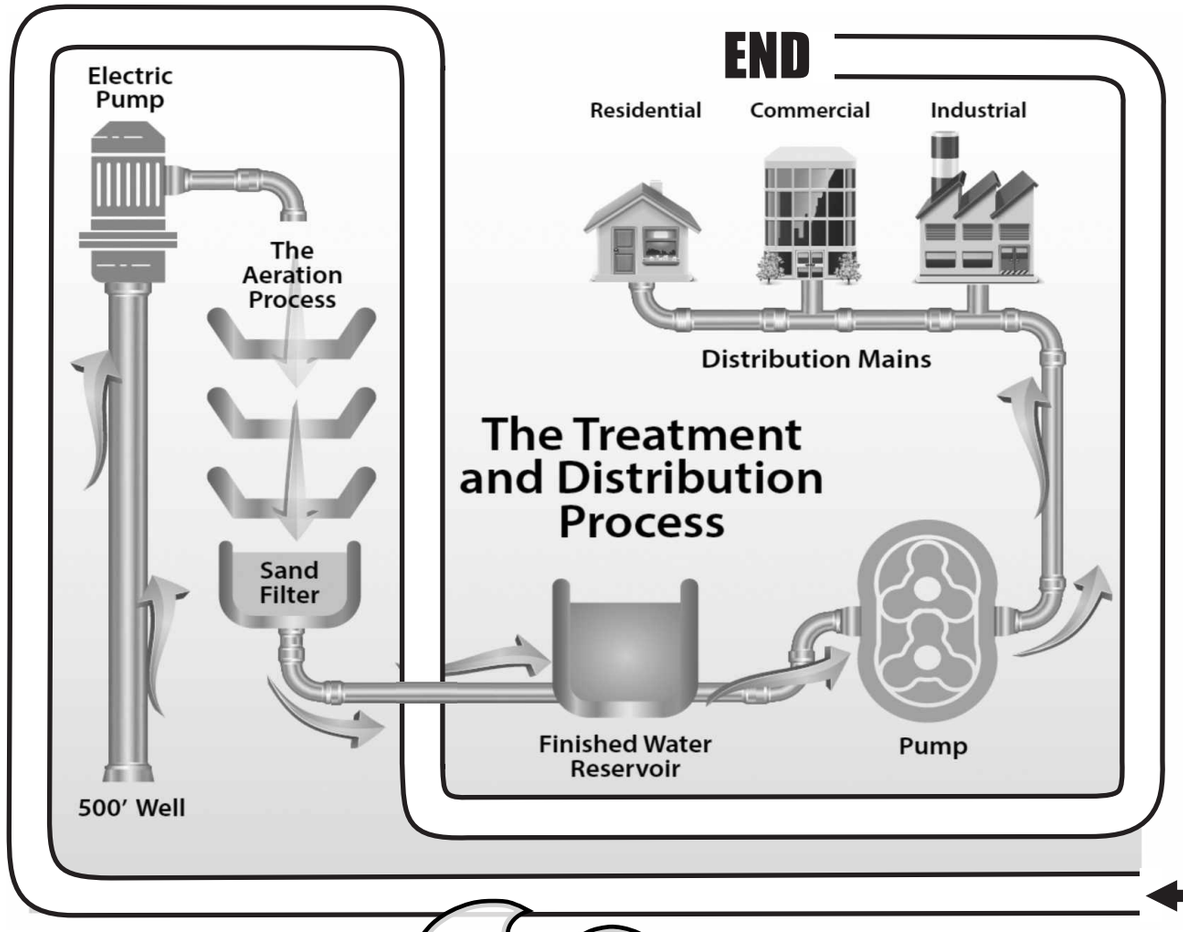
Mississippi Embayment – Natural bowl-shaped formation featuring alternating layers of water-bearing sand and impermeable clay. Covers a large region from the Tennessee River to Arkansas' Black River.

Mississippi **River** – Surface water supply not used in Memphis as a source of drinking water.

Reservoir – Natural or man-made storage area. May be above or below ground.

Surface water – Water source which covers the Earth's surface, including the Mississippi and Wolf rivers. Represents 97 percent of Earth's water supply, but not Memphis.

How does water get to your home?



Follow the water through the path to learn!

·An artesian aquifer is a natural underground reservoir which contains pressurized water capable of rising several hundred feet under its own force. Located throughout Memphis and Shelby County, MLGW's 10 pumping stations operate more than 135 wells tapped into the aquifer system. A three-phase process removes impurities and fortifies water with sodium hypochlorite (bleach), fluoride and phosphate to ensure the highest standards of purity. Once treated, water is distributed to MLGW residential, commercial and industrial customers throughout the county.

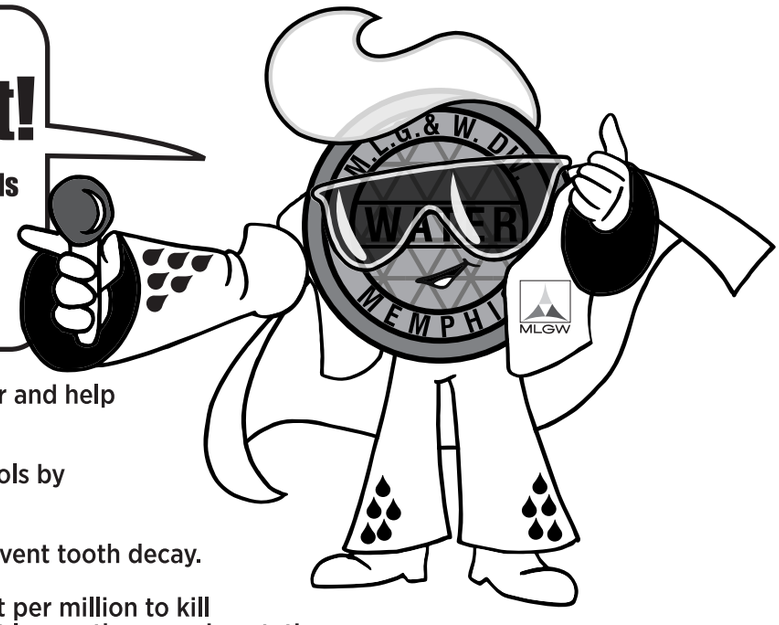
After the water is collected, MLGW's Water Quality Assurance Laboratory ensures our water's quality and safety through a battery of tests (close to 40,000 a year). Memphis is the largest city in the world with a water supply that relies exclusively on artesian wells

Understanding

Water Treatment!

See if you can find the bold vocabulary words in the word search below.

(each word is separate and can be found up, down, backward or forward)



Aeration – Process used to force air into raw water and help remove iron, other minerals and impurities.

Backwashing – Process used to clean the filter pools by flushing sediment from the system.

Fluoride – Chemical added to water at to help prevent tooth decay.

Sodium Hypochlorite – Chemical added at one part per million to kill bacteria that could contaminate the water after it leaves the pumping station.

Coke Rocks – Natural, lightweight substance resembling lava rock that is used to line aeration trays.

Filtration – Second stage in the water treatment process, which removes mineral particles from raw water.

Hundred Cubic Feet – Unit of measure used to define water consumption. One ccf equals 748 gallons.

Pumping Station – Facility where water is treated, stored and distributed for use. MLGW has 10 pumping stations throughout Shelby County.

Well – Cased hole drilled to remove water from aquifers using electric pumps and pumped to the pumping station. MLGW's wells range in depth from 500 to 1,400 feet depending on the aquifer tapped.

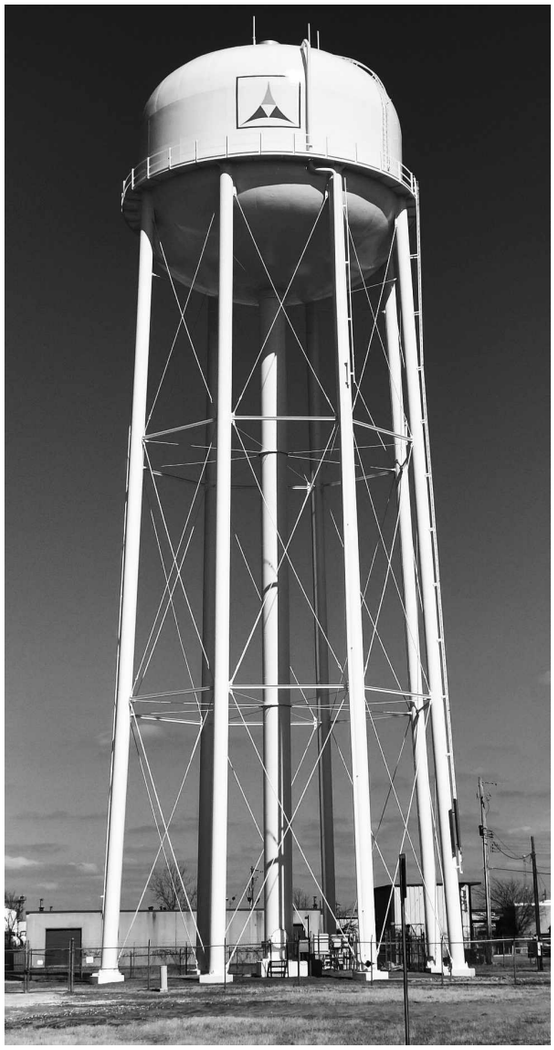
Q L T G J H M T V J I M D F T G I Z G K
F U H X O I F S D N Z D D Q H G J T M R
W N D G W C N E Q A W I D Y D Y G K Q G
D E D I R O U L F D M C Q S K C O R U T
D V N R L O Q A E T I R O L H C O P Y H
Q E K O C C L J N B S D S O D I U M R F
R Y P P I U Q Y U B H A Z R D J Q N I Q
V W U F V T O C A E R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

See if you can find the 8 differences in the

Water Towers

A water tower provides 2 main purposes to help serve customers: To provide water storage and to help maintain water pressure. Water storage and water pressure are also important in fighting fires.

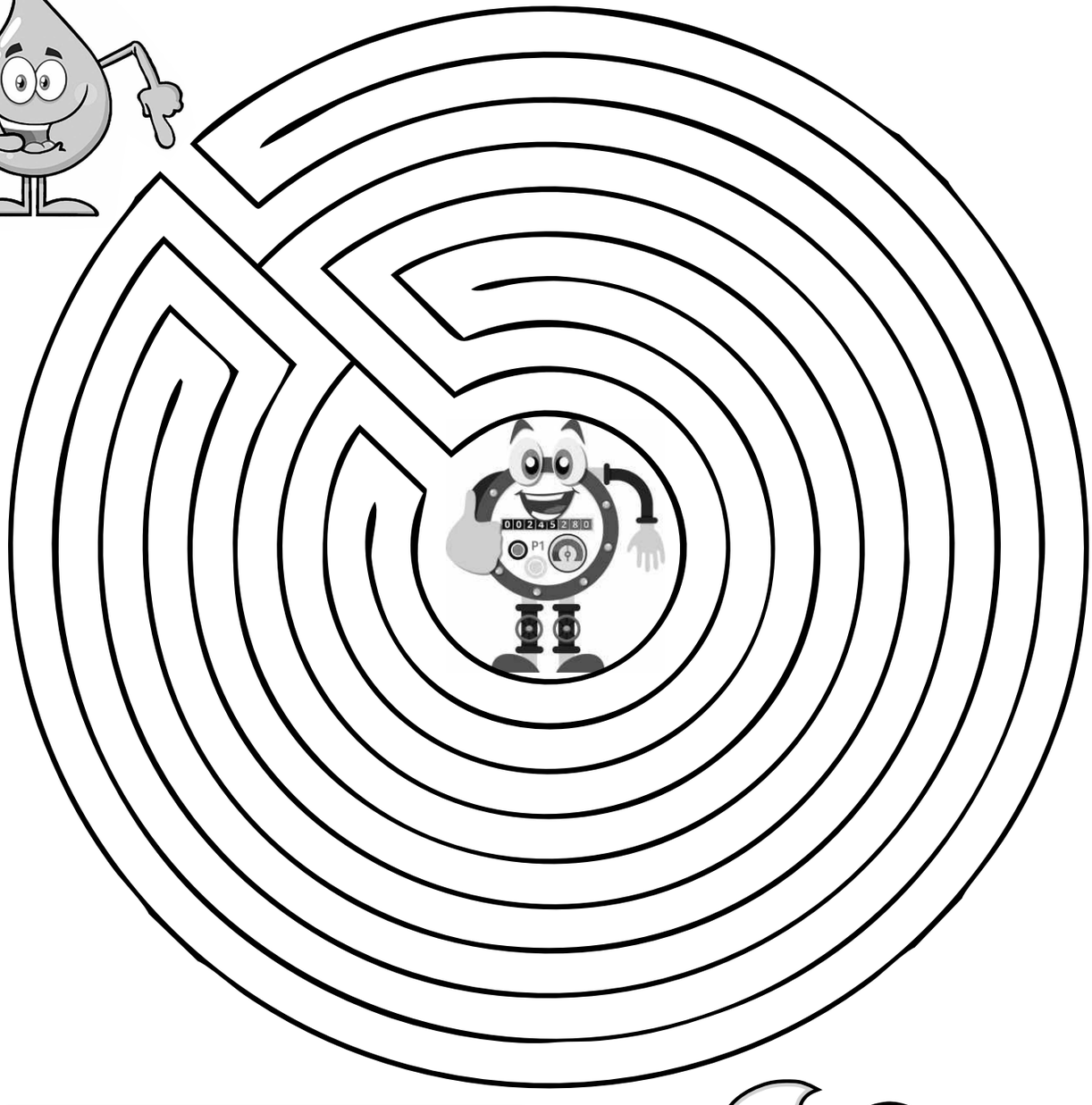
Water fills the tower by pressure supplied by the pumps at the water pumping stations. The big bowl at the top of the tower is the tank that stores the water. The tank fills and drains by water entering and exiting through a pipe at the bottom of the tank that goes into the ground. That pipe is connected to the water mains in the streets that provide water to the customers. A valve controls the amount of water entering and exiting the tank.



The water tower above is on Presidents Island can store 500,000 gallons and provides storage and pressure for the industrial customers on Presidents Island. MLGW has 15 water towers throughout the water system, and storage capacities range from 100,000 gallons to 500,000 gallons. Most of the other towers are located in areas to help provide water storage and pressure for residential and rural areas.

WATER METER MAZE

See if you can help the water find it's way to the water meter.



Water Meter

A water meter is a device used to measure the amount of water consumed by a customer.

It's located in an underground meter box near the curb.

DRAW A LINE BETWEEN THE HAZARDOUS WASTE AND THE PICTURE THAT MATCHES

Always use and dispose of harmful materials properly. Don't pour hazardous waste down the drain, on the ground or into storm sewers because this can contaminate the soil, groundwater or nearby surface water. Some examples include:

Motor Oil

Pesticides

Leftover Paints or Paint Cans

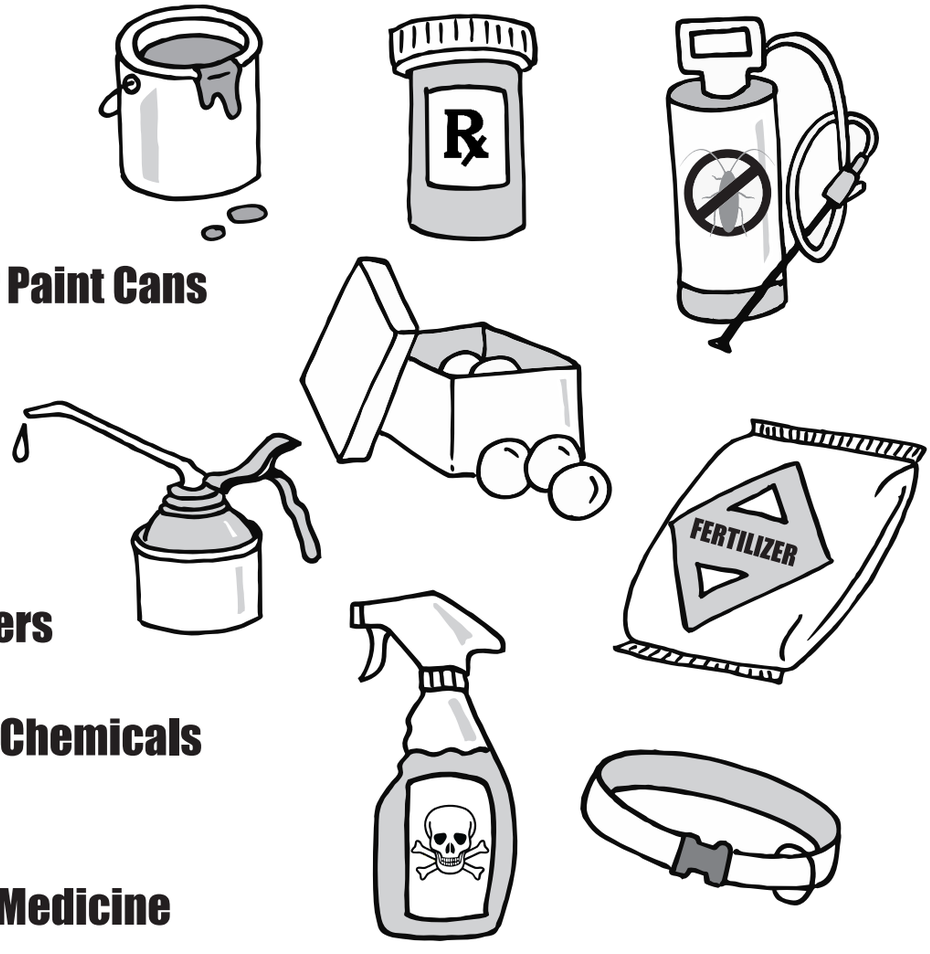
Mothballs

Flea Collars

Household Cleaners

Lawn and Garden Chemicals

Prescription and Over the Counter Medicine



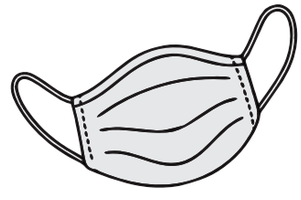
Prescription and over the counter drugs poured down the sink or flushed down the toilet can enter rivers and lakes and may flow to community drinking water supplies. Please tell your parents to consult their pharmacist for instruction on how to dispose of unwanted medicines.

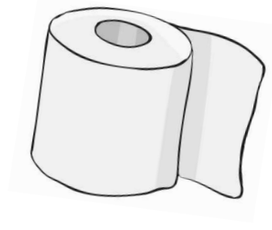
Remember to turn the water OFF while you are actually brushing your teeth.

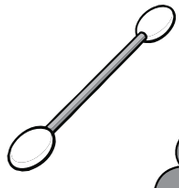
FINISH THE DRAWING TO THE LEFT, MAKING IT LOOK AS MUCH LIKE THE EXAMPLE BELOW AS POSSIBLE.

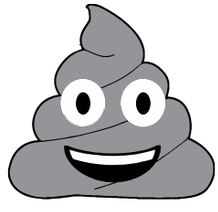
THEN COLOR YOUR MASTERPIECE.

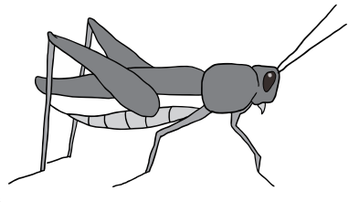
CIRCLE THE ITEMS BELOW THAT BELONG IN THE TRASH, NOT THE TOILET!

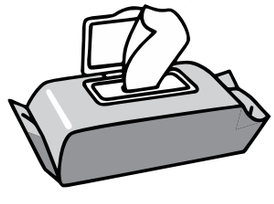


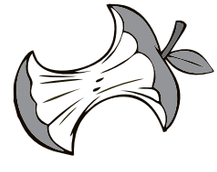


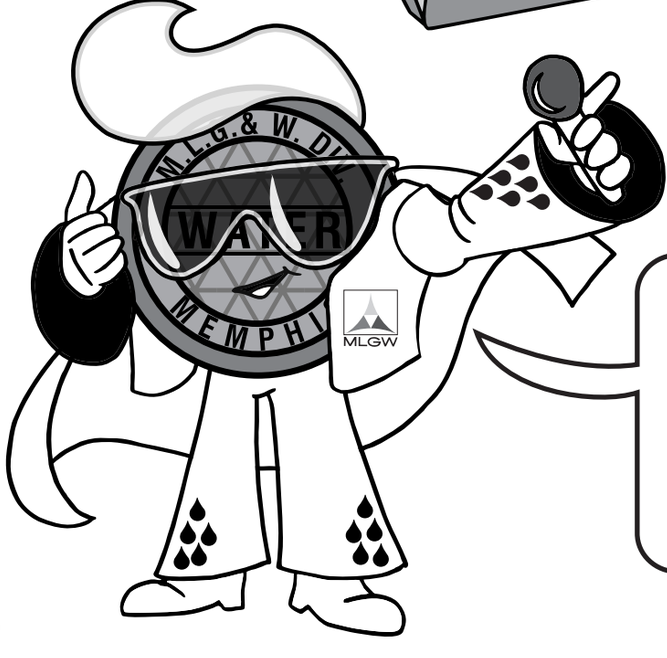






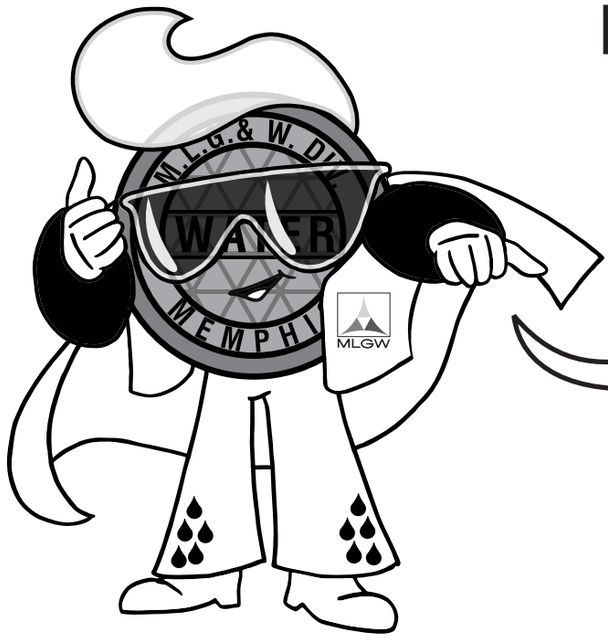






Don't use the toilet as a trash can.
Throw tissue, insects,
and similar waste in the trash.
Only the 3 P's in the toilet:
Pee, Poop and toilet Paper

FIND THE HIDDEN UTENSILS IN THE DISHWASHER.



When using an electric dishwasher, use it only to wash full loads, and use the shortest cycle possible.

See if you can find:

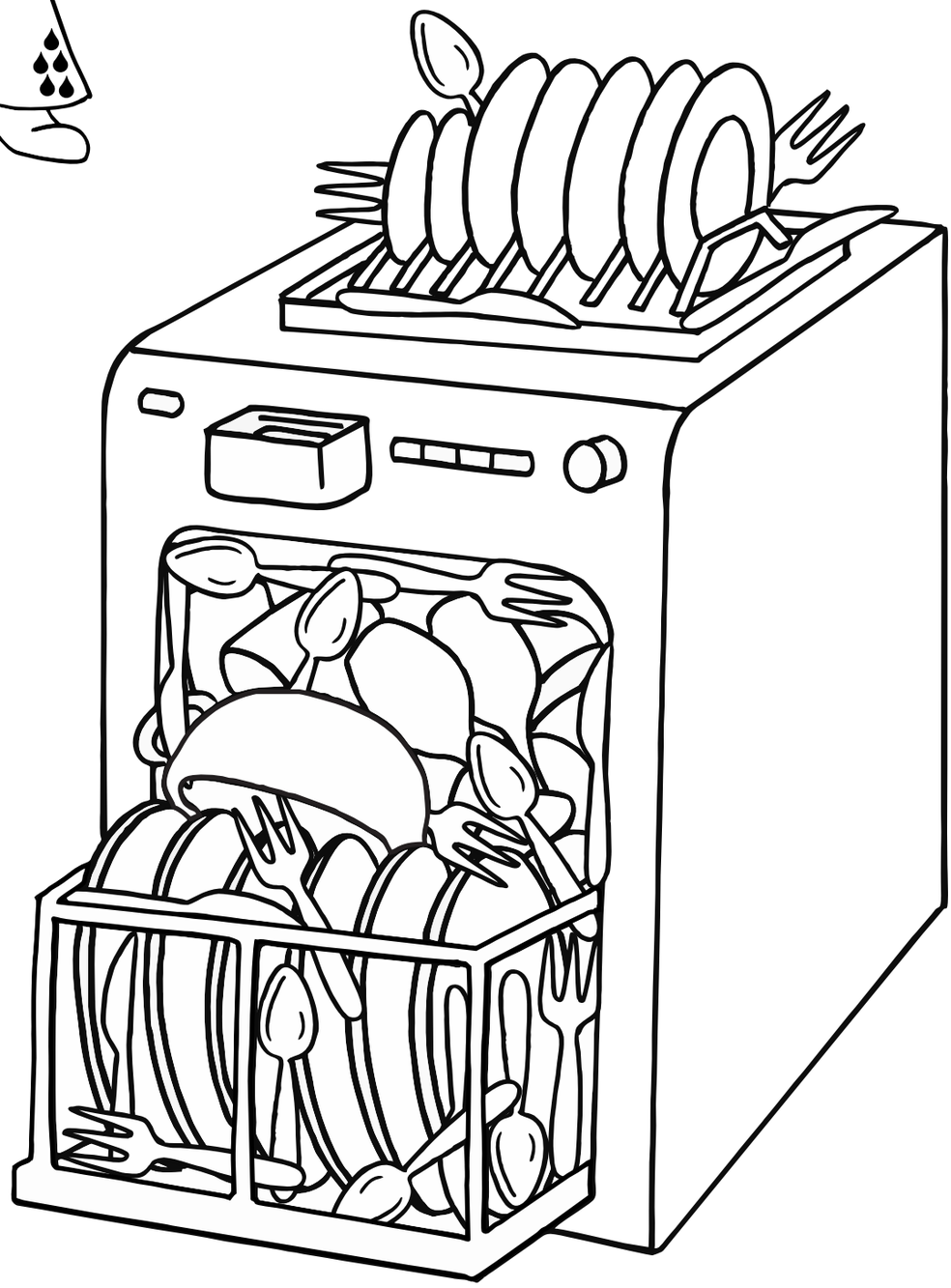
7 forks

7 spoons

and

7 knives

that are on or in the dishwasher to the right.



Water Conservation!

Conserving water helps people, animals and the planet!

Fill in the blanks. Water Mane is giving you the clues!

Always turn off _____so they do not drip.

When hand-washing dishes, never run water continuously. Wash dishes in a partially filled sink and then _____ them using the spray attachment on your tap.

When using an electric dishwasher, use it only to wash full loads, and use the _____ cycle possible.

Turn the_____ off while you are actually brushing your teeth.

Wash only _____ loads in the washing machine.

Water the yard during the _____parts of the day, in the morning or evening.

Check for faucet and toilet _____and ask an adult about repairing them.

Don't run the faucet while waiting for a cooler drink of water. Store drinking water in the _____ or use ice cubes.

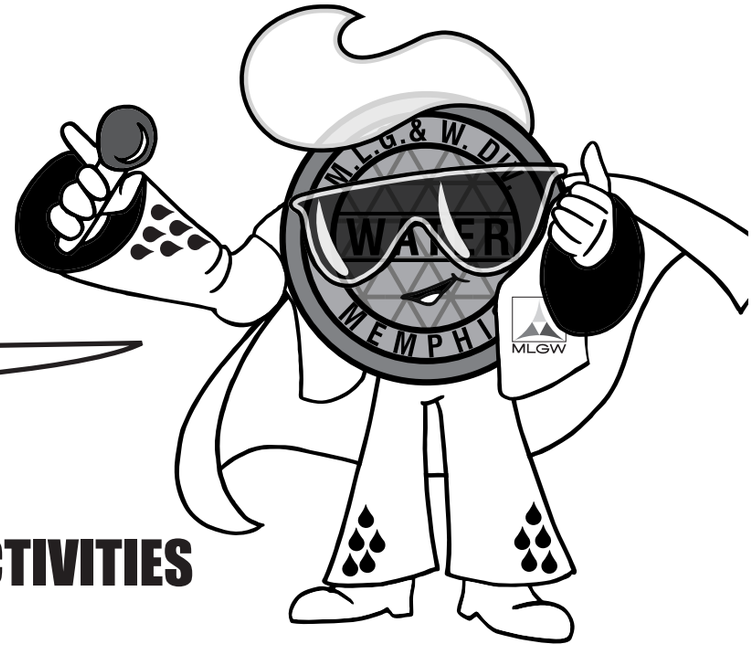
Take shorter _____.

Don't use the toilet as a trash can. Throw tissue, insects and similar waste in the _____.

showers
shortest
faucets
trash
water
full
rinse
cool
leaks
refrigerator

Water Mane's

mission is to protect the Memphis Aquifer and encourage water conservation



CIRCLE THE WATER SAVING ACTIVITIES YOUR FAMILY DOES

Water your yard and outdoor plants early or late in the day to reduce evaporation.

Use a shut-off nozzle on your hose when washing cars.

Use plants that require less water than a lawn.

Mulch around plants to hold water in the soil.

Get an Energy Star labeled washing machine.

Wash only full loads.

Use a low-flow showerhead.

Take shorter showers. Five minutes or less is best.

Turn off the water while soaping hands and brushing teeth.

Turn off sink faucet while scrubbing dishes and pots.

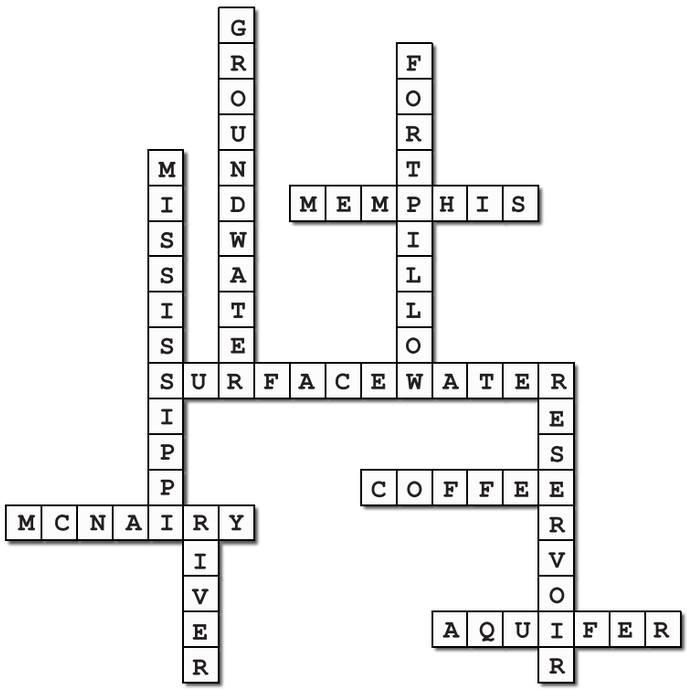
Install new toilets that use less than 1.28 gallons per flush.

Put faucet aerators on sink faucets.

Use a broom, not a hose, to clean driveways and walkways.

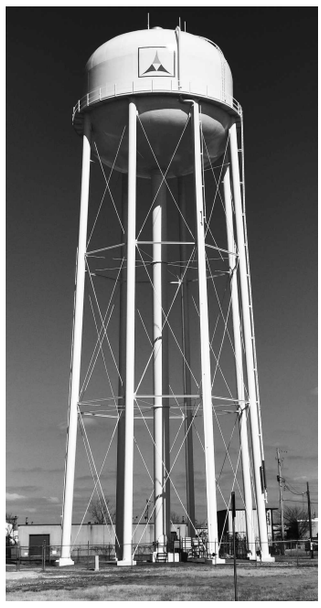
ANSWERS

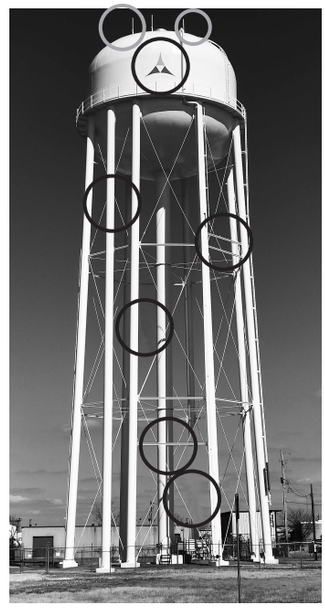
PAGE 3



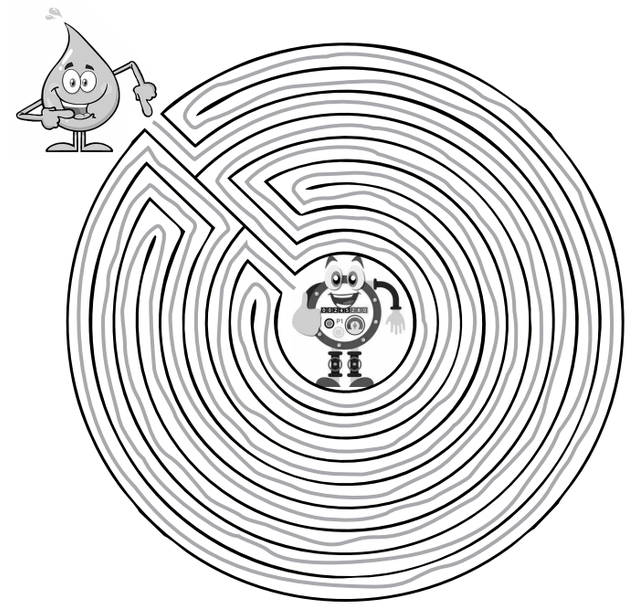
PAGE 5

PAGE 6



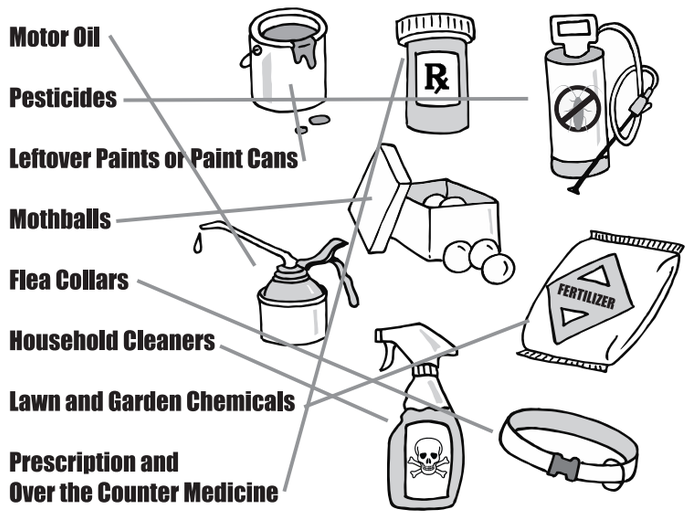


PAGE 7



ANSWERS

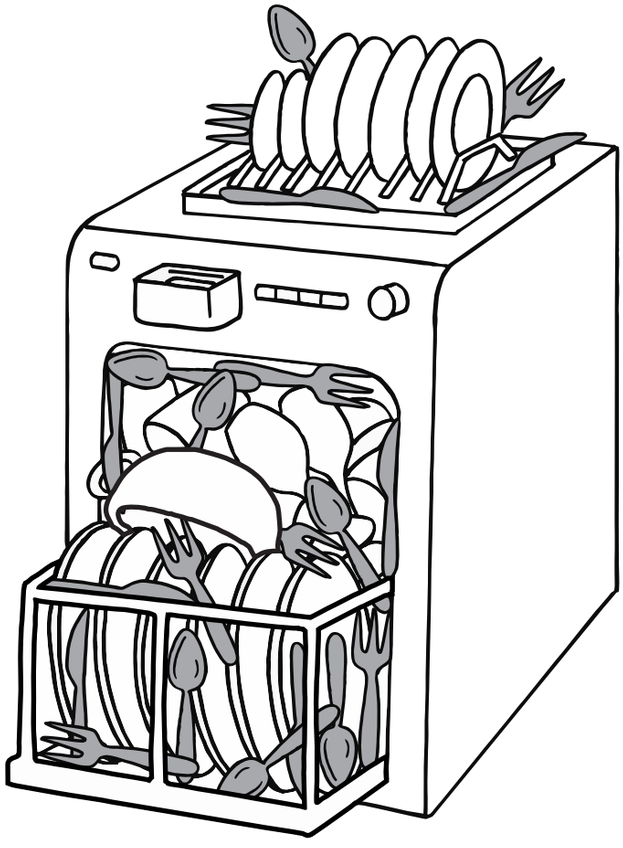
PAGE 8



PAGE 10

CIRCLE THE ITEMS BELOW THAT BELONG IN THE TRASH, NOT THE TOILET!

PAGE 6



PAGE 7

Always turn off faucets so they do not drip.

When hand-washing dishes, never run water continuously. Wash dishes in a partially filled sink and then rinse them using the spray attachment on your tap.

When using an electric dishwasher, use it only to wash full loads, and use the shortest cycle possible.

Turn the water off while you are actually brushing your teeth.

Wash only water loads in the washing machine.

Water the yard during the cool parts of the day, in the morning or evening.

Check for faucet and toilet leaks and ask an adult about repairing them.

Don't run the faucet while waiting for a cooler drink of water. Store drinking water in the refrigerator or use ice cubes.

Take shorter showers.

Don't use the toilet as a trash can. Throw tissue, insects and similar waste in the trash.


I hope you had fun!
Spread the word . . .
Wasting water away is not okay!
M.L.G.& W. DIV.
WATER
MEMPHIS
MLGW

MLGW

POWER LEAGUE

The Power League says:

Go to school!

Learn about the environment and what you can do to help.

Have a clean record!

Be healthy and fit!

Don't do drugs!

MLGW

For a complete answer key and career information
go to:

www.mlgw.com