MARICOPA COUNTY

Environmental Services Department

Stormwater Activity Book

Welcome to Maricopa County ESD Stormwater Activity Book!

Illustrated by: _____

(Your Name Here)

Maricopa County
Environmental Services Department (ESD)
Quality & Compliance Division
Stormwater Quality Program

The goal of this activity book and for the Stormwater Quality Outreach program is to raise awareness of stormwater runoff, offer solutions to runoff pollution, and to protect our drinking and recreational water.

Each page has a different activity or picture to color. Have fun and thank you for helping prevent stormwater pollution!

*All answers can be found on the Answer Page (inside page of back cover).

Cover page artwork is from entries for the 2015 Stormwater Pollution Prevention Poster Contest.

Introducing...

Sam the Sonoran Tiger Salamander

Meet Sam – the new Stormwater Quality mascot! Sam is a Sonoran Tiger Salamander that can only be found in a small part of southern Arizona and Northern Mexico. Sam is an amphibian which means he is capable of surviving both in water and on land! He's an indicator animal meaning he is sensitive to water quality and pollutants (bad things that get into the water). Sam is going to assist in educating us about keeping stormwater pollutants from reaching our waterways so that he can have a clean, healthy habitat. As we fulfill the Department's mission, we keep the environment clean for Sam and for ourselves.

Color
Me!

Fast Facts:

1. They can grow up to 15 inches long. How tall are you? _____
2. Feed on a variety of insects, worms and snails. What is your favorite food?
   _____
3. Sonoran Tiger Salamanders are amphibians which mean they are capable of surviving both in water and on land. Can you name any other animals that can live in water and on the land?
   _____

What is Stormwater?

In Maricopa County, stormwater means rainwater runoff. If you live in Flagstaff, AZ it would mean rain water runoff or snowmelt.

Question:

Do you know where stormwater (and any debris) goes once it enters a storm drain?

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

Answer

(look for in word search):

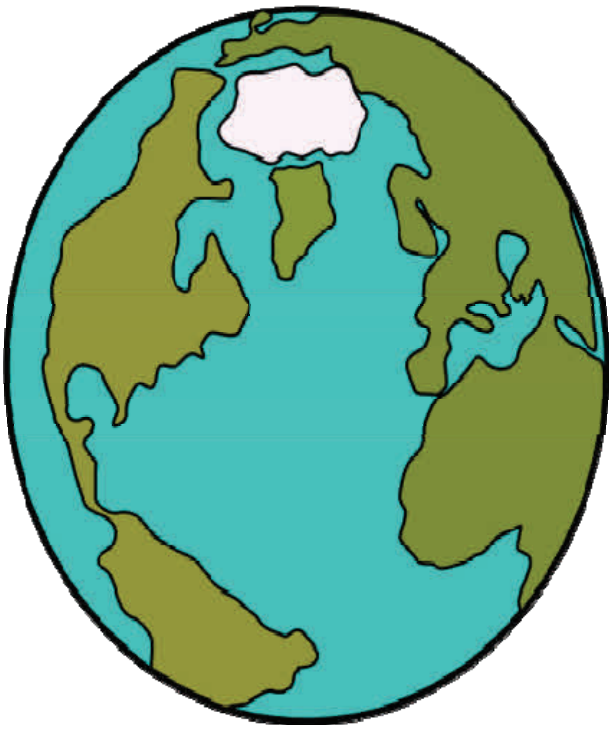
Lakes
Washes
Parks
Canals

Sometimes stormwater gets "dirty" or polluted.

Common Stormwater Pollutants (look for in word search):

Pet Waste
Chemicals
Leaves
Grass
Oil
Trash

Answers can be found on the Answer Page (inside page of back cover).



Where is our Water?

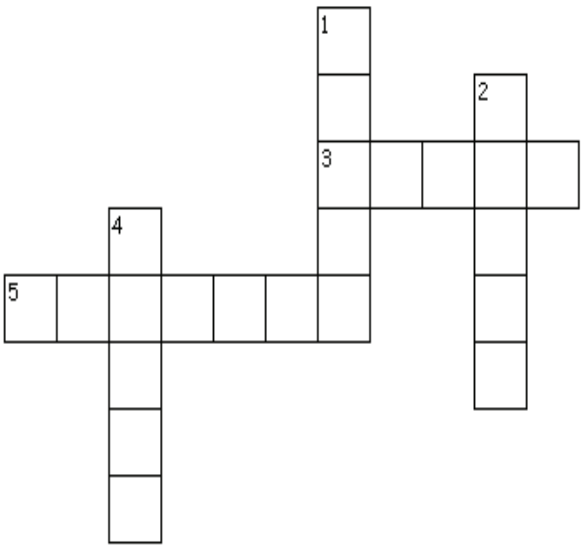
Unscramble the words to find out all the places where we can find water here on Earth:

1. k-a-l-e-s: _____
2. v-i-r-r-e-s:_____
3. n-o-e-c-a-s: _____
4. d-g-r-u-o-n r-w-a-e-t: _____ _____
5. e-r-g-s-l-a-c-I: _____

Water Pollution Prevention

Across
3. Don't apply fertilizer to a lawn before a ____.
5. Throw away all _____ in a trash can not in the street.

Down
1. Pick up dog _____ and put it into a trash can.
2. Only rain should go into the storm _____.
4. Use a _____ instead of a hose.



Answers can be found on the Answer Page (inside page of back cover).

Decoding Watersheds

A watershed is land that drains rain and snow to a stream or lake.

Use the letters of the alphabet that match with the numbers and decode the message.

1 = A
2 = B
3 = C
4 = D
5 = E
6 =F
7 = G
8 =H
9 = I
10 =J
11 =K
12 = L
13 =M
14 = N
15 =O
16 = P
17 =Q
18 = R
19 =S
20 = T
21 = U
22 = V
23 = W
24 = X
25 = Y
26 = Z

__ __ __ __ __ __ __ __ __ __ __
25 15 21 12 9 22 5 9 14 1

__ __ __ __ __ __ __ __ __
23 1 20 5 18 19 8 5 4.

Make your own decoded message below:

Wildlife like salamanders and birds need healthy water to survive.

Most of the problems in our watersheds come from polluted stormwater runoff: rain that washes over our sidewalks and streets, carrying sand (can cloud water preventing aquatic plants to grow), oil (poisonous to aquatic wildlife), fertilizer (plant food-causes excess nutrients in the water that can cause algal blooms which removes oxygen from the water that aquatic wildlife need to survive), pet waste (adds bacteria and excess nutrients to the water), pesticides (bug spray – poisonous to aquatic wildlife), herbicides (weed spray – poisonous to aquatic wildlife), and litter (i.e. plastic bags - choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds) into our waters.

Answer can be found on the Answer Page (inside page of back cover).

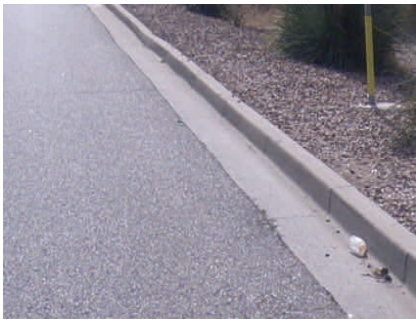
Have You Seen a Storm Drain?

Below are pictures of storm drains and storm drain structures. Did you know storm drains have different names? Draw an arrow from the storm drain structure to its correct name.

Curb and Gutter

Scupper

Drop Inlet

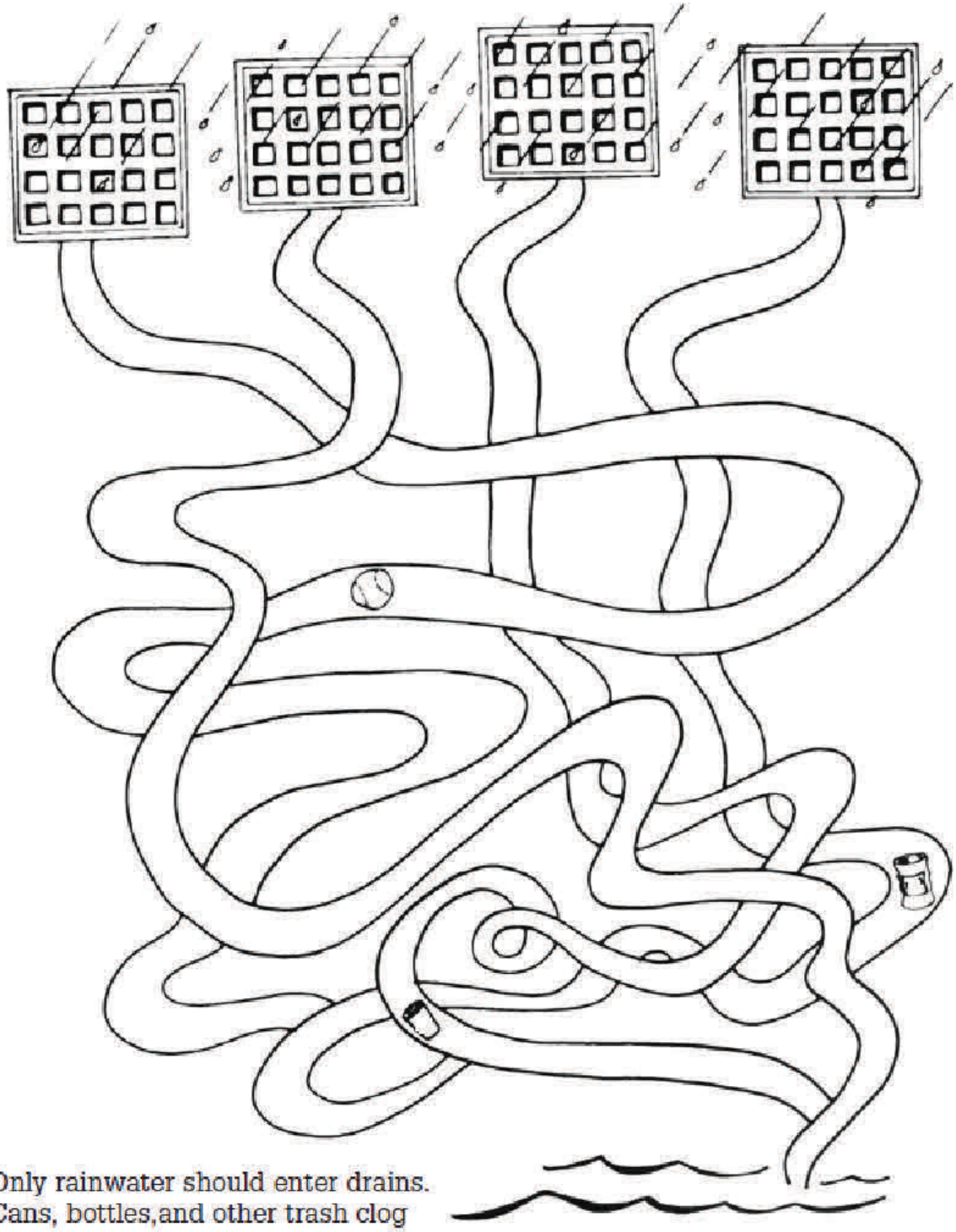


Curb Inlet

Answers can be found on the Answer Page (inside page of back cover).

Storm Drain Maze – Clear Path Activity

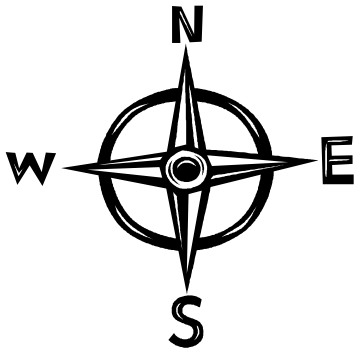
Find the storm drain that has clear path from start to finish.



Only rainwater should enter drains. Cans, bottles,and other trash clog storm drains and cause flooding.

(Special thanks to the Massachusetts Water Resources Authority)

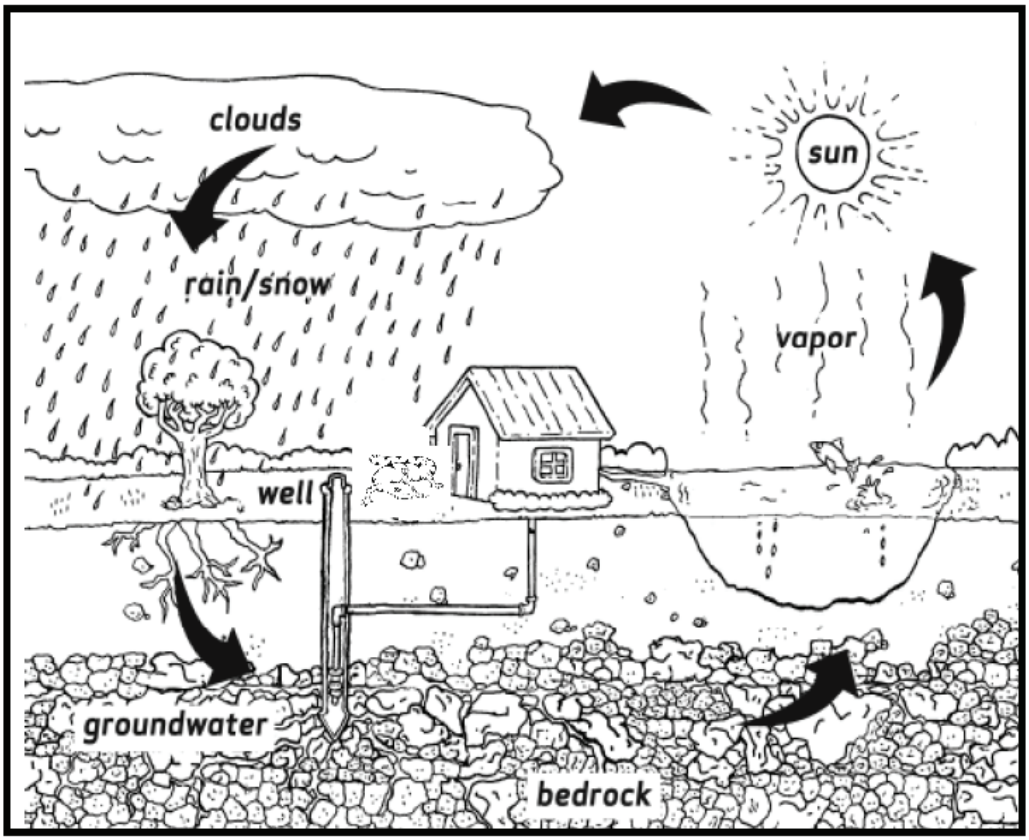
Answer can be found on the Answer Page (inside page of back cover).



Mapping Your Neighborhood!

1) Draw your house
2) Draw your street
3) Draw your sidewalks
4) Draw your neighbor's houses
5) Find and draw the storm drains closest to your house. Keep an eye on the storm drains. Have your parents call Maricopa County's Complaint line at 602-506-6616 if your family ever sees somebody putting one of the stormwater pollutants down the storm drain – for example, motor oil.

Color in the Water Cycle



(Special thanks to the EPA)

- Definitions for circled words are on the Answer Page (last page in book)

Circle evaporation in the picture above?

Circle condensation in the picture above?

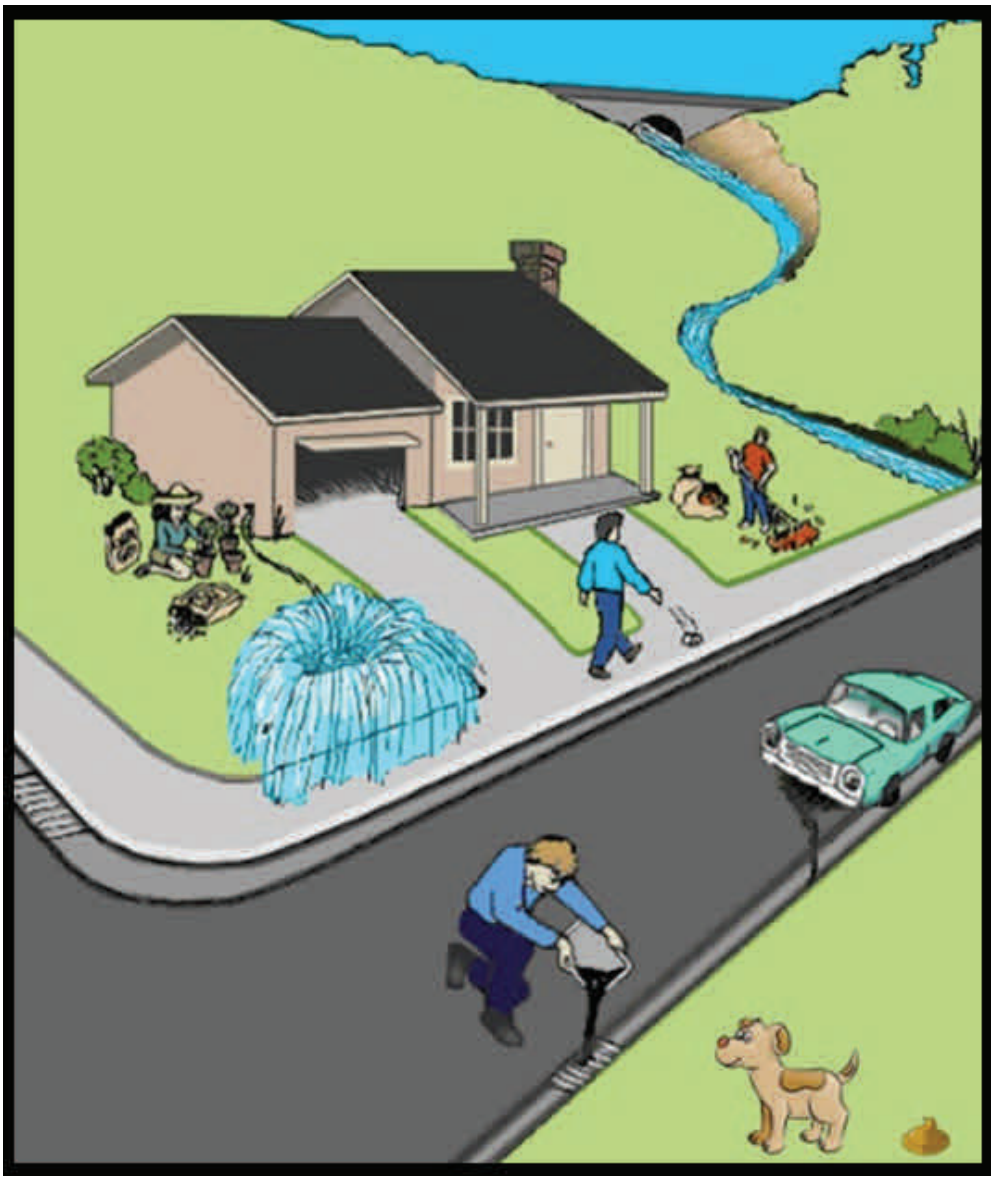
Circle precipitation in the picture above?

Circle Sam in this picture in the picture above?

When water falls back to earth as precipitation, it may fall back in the oceans, lakes or rivers or it may end up on land. When it ends up on land, it will soak into the earth and become part of the "ground water" that plants and animals use to drink or it may run over the soil and collect in the oceans, lakes or rivers where the cycle happens again!

Stormwater Pollution

Since stormwater goes directly to our waterways, it is important to prevent stormwater pollution. Circle the 8 common stormwater pollutants.



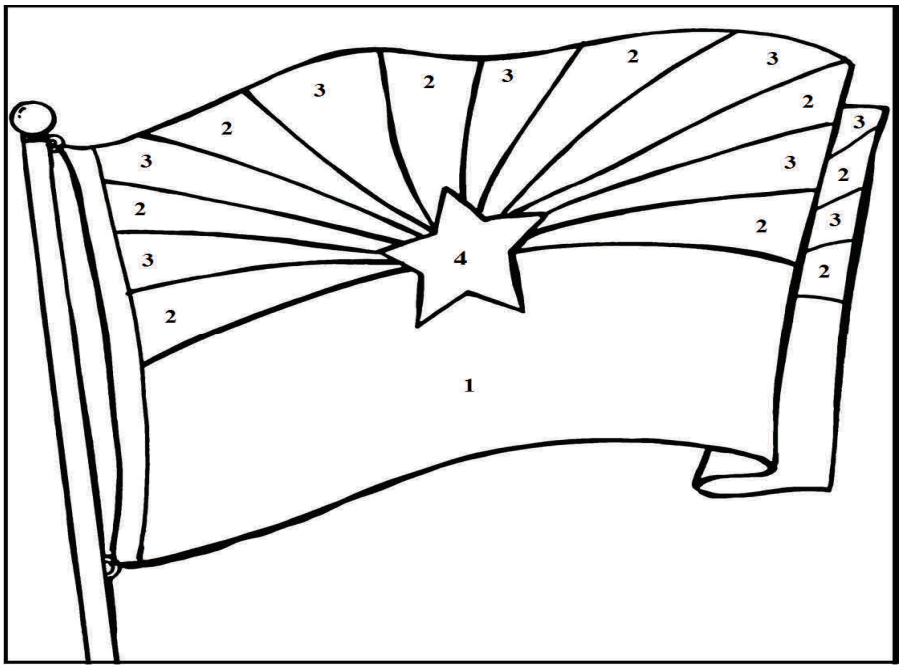
(Special thanks to the EPA)

What can you do to prevent stormwater pollution?

Answers can be found on the Answer Page (inside page of back cover).

Arizona State Animals & Plants

When you are helping keep our water clean you are helping everyone and everything that lives in Arizona!



Color! 1=Blue, 2=Red, 3=Yellow, 4=Orange*

What is Arizona's State Flower? _____

What is Arizona's State Bird? _____

What is Arizona's State Reptile? _____

What is Arizona's State Mammal? _____

What is Arizona's State Fish? _____

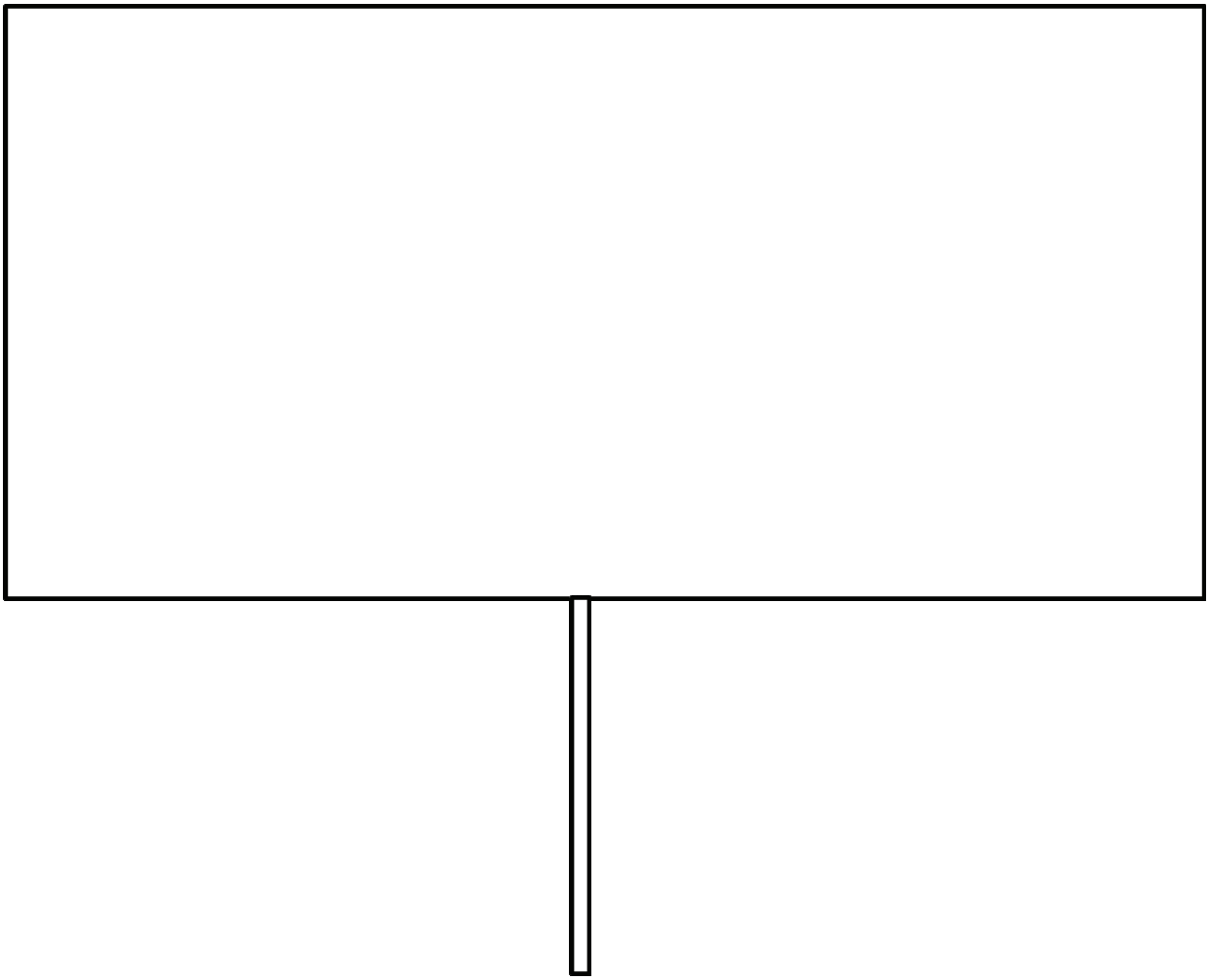
What is Arizona's State Tree? _____

What is Arizona's State Amphibian? _____

*the star should be copper color, but orange looks good too!

Answers can be found on the Answer Page (inside page of back cover).

Think of a Slogan for the Billboard Below to Help Spread the Word About Stormwater Pollution Prevention.

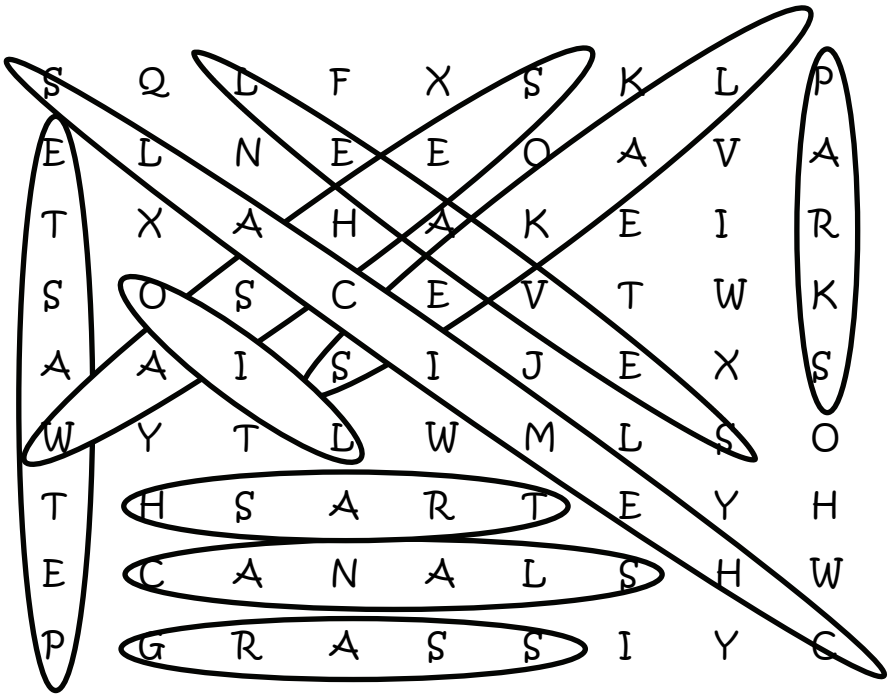


Visit our website, maricopa.gov/stormwater to learn more about stormwater pollution and to find out how to enter our annual stormwater pollution prevention poster contest!

Use the next (blank) page for your artwork
for the stormwater pollution prevention poster contest.

Answer Page

Page 2:



Page 3: Where is Our Water: 1-lakes, 2-rivers, 3- oceans, 4- ground water, 5-glaciers

Page 3: Water Pollution Prevention Crossword: 1-waste, 2-drain, 3- storm, 4-broom, 5-garbage

Page 4: "You live in a watershed"

Page 5: From top picture to bottom picture – Drop Inlet, Curb Inlet, Scupper, Curb & Gutter

Page 6: Second drain from left

Page 8: Evaporation is when the sun heats up water in rivers or lakes or the ocean and turns it into vapor or steam. The water vapor or steam leaves the river, lake, or ocean and goes into the air. Condensation - water vapor in the air gets cold and changes back into liquid, forming clouds. Precipitation occurs when so much water has condensed that the air can't hold it anymore. The clouds get heavy and water falls back to the earth in the form of rain, hail, or snow.

Page 9: 1-pouring oil down the storm drain, 2- leaky vehicle, 3-fertilizer, 4-pesticides (bug spray), 5-litter (garbage i.e. candy wrappers), 6-yard waste (grass clippings, leaves), 7- erosion along river, 8-pet waste

Page 10: 1-Saguaro Cactus Blossom, 2- Cactus Wren, 3-Ridge-nosed Rattlesnake, 4-Ringtail, 5-Apache Trout, 6-Palo Verde Tree, 7-Arizona Tree Frog

Maricopa County Environmental Services Department

Stormwater Activity Book

Maricopa County's Stormwater Quality Program

For more information, call 602-506-5557.

maricopa.gov/stormwater

Sam the Sonoran Tiger Salamander

The Maricopa County Stormwater Program informs County residents about Stormwater Pollution Prevention through various media and personal appearances. Maricopa County Stormwater Quality Program provides stormwater pollution educational and informational opportunities for homeowner associations, businesses, and community events through an interactive Watershed Pollution EnviroScape model and other hands-on games/activities. Our staff will come to your meeting or event and demonstrate the local impacts of stormwater pollution on our County's water resources. Our outreach staff is also available to deliver free hands-on stormwater workshops to all Kindergarten – 8th grade students directly to your school, library, community center, or other educational venue within Maricopa County. For more information about these opportunities, please visit our website maricopa.gov/StormWater/

Maricopa County
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Information: 602-506-5557
Complaints: 602-506-6616