

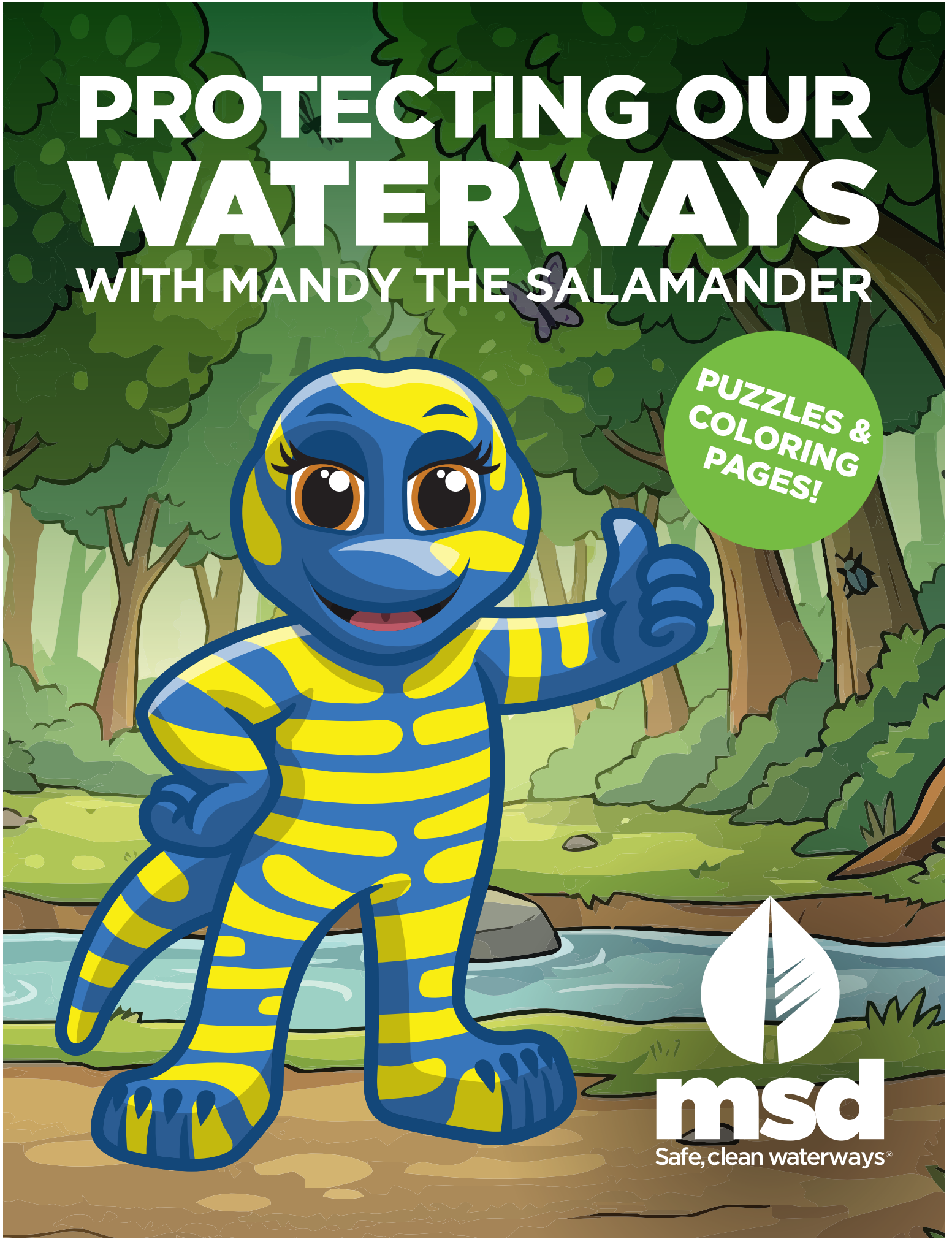
PROTECTING OUR WATERWAYS

WITH MANDY THE SALAMANDER

PUZZLES &
COLORING
PAGES!



msd
Safe, clean waterways®



HAVE YOU MET MANDY THE SALAMANDER?

Mandy the Salamander helps Louisville MSD explain why safe, clean waterways are important for salamanders like her, and other fish and animals living in and near our streams.

Mandy is a **Tiger Salamander**, or *Ambystoma tigrinum*, a mole salamander species, and one of North America's largest terrestrial salamanders. Tiger Salamanders are very picky about where they live. Female salamanders like Mandy can lay hundreds of eggs in the water. When they hatch, the baby salamanders, or larvae, stay in the water for up to five months until they are adults. You can see why safe, clean waterways are very important to salamanders!



WATERWAY WORD SEARCH

Can you find the words we use when speaking about keeping our streams safe and clean?

Some words may be forward, backward, horizontal, vertical or even diagonal.

STORMWATER

SALAMANDER

POLLUTION

TREES

WATERSHED

RUNOFF

CONSERVATION

ENVIRONMENT

RAINGARDEN

SEDIMENT

FLOWERS

STREAM

CLEAN WATER

OIL

TRASH

RAIN

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

Drains are only for water.

Never dump anything into a catch basin or storm drain. They drain into the stream!



Put pet waste in the trash.

Dogs in Jefferson County produce 4 dump trucks of waste everyday.



CAN YOU SOLVE THE MESSAGES?

Have you ever seen rainwater flowing down a road and wondered where it goes?
 Mandy knows the rainwater eventually makes it to her home near the stream.
 That water can carry trash and other waste as it travels, polluting Mandy's home.

**Unscramble the sentences below to find out what you can do to help
 keep our waterways safe and clean for Mandy and her friends.**



— — — — — — — — — —
 L T N P A A R E T E



— — — — — — — — — — — — — — — — —
 K P I C P U O D G A S W T E



— — — — — — — — — — — — —
 N O T D T L T I E R

**Solve the hidden message to help Mandy and
 her friends by using the code key below.**



— — — — — — — — —
 2 5 1 3 12 5 1 14

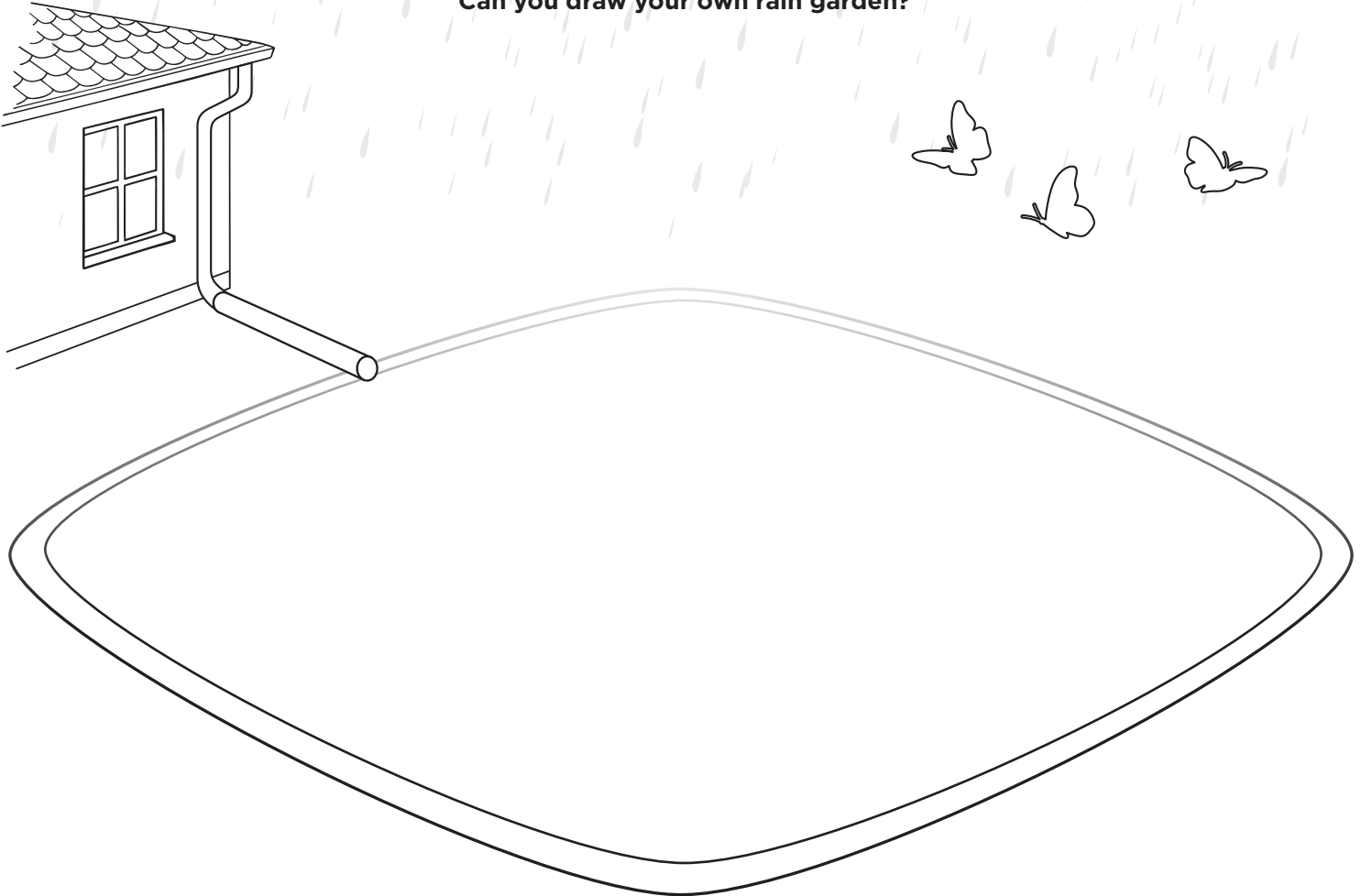
— — — — — — — — — —
 23 1 20 5 18 8 5 18 15

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

CREATE YOUR RAIN GARDEN

Rain gardens are special gardens designed to help soak up rainwater. They have plants with deep, dense root systems that can capture and absorb stormwater runoff. This helps keep sewer systems from being overrun with too much runoff and keeps pollution out of nearby streams and rivers.

Can you draw your own rain garden?



Benefits of Native Plants

- Native plant root systems **nourish the soil** and **absorb water** to control runoff and reduce localized flooding.
- Deep roots help **anchor plants** in place and **prevent soil erosion**.
- Roots **filter out pollutants** and prevent them from entering the waterways.

Here are few examples of native plants to show your parents and use in your own rain garden.



Bee Balm



Black-Eyed Susan



Blazing Star



Goldenrod



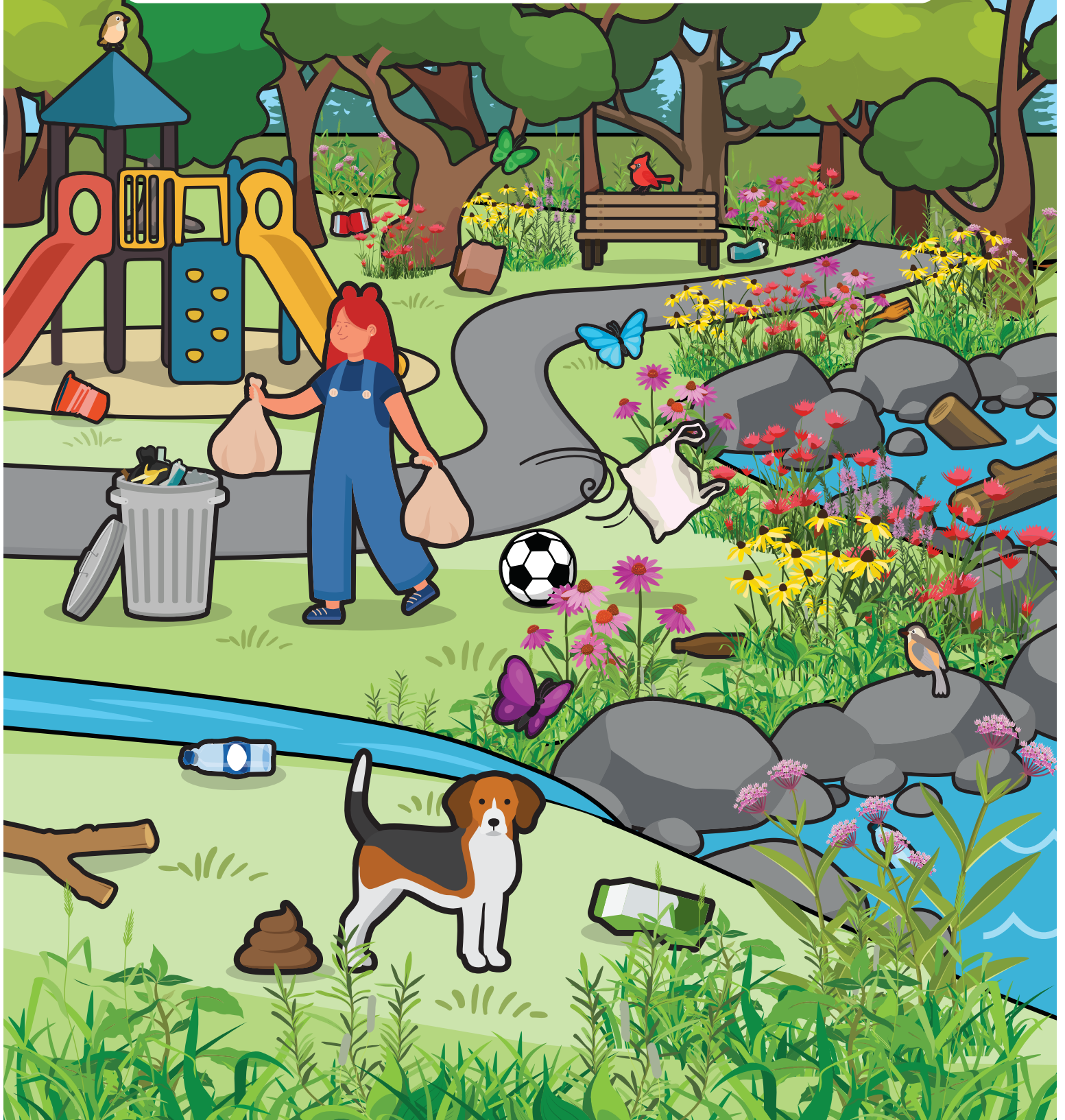
Coneflower



Milkweed

HOW CAN YOU HELP KEEP OUR WATERWAYS SAFE AND CLEAN?

Circle all the trash that you could help to pick up!

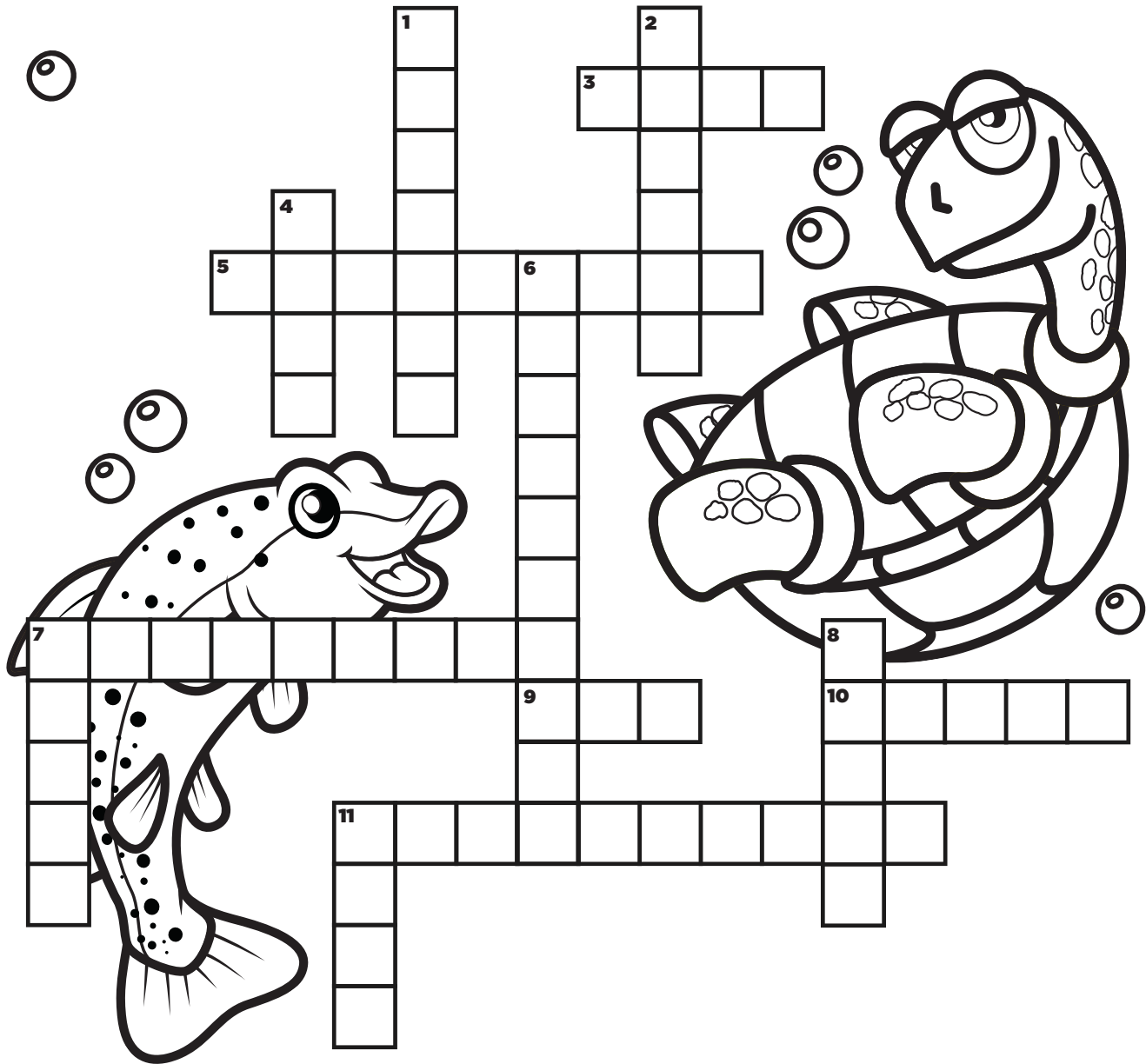


MANDY

THE SALAMANDER



WATER WORDPLAY



Down

1. Purple coneflowers, goldenrod, and blue flag irises are examples of these types of plants and native to Kentucky.
2. Another word for trash.
4. Water falling from the sky.
6. Amphibian in our local waterways with a tail.
7. Public green areas where you can play.
8. Tall plants that provide shade, make oxygen, clean the air and provide a place for animals to live.
11. A small object produced by a plant from which a new plant can grow.

Across

3. Animal that only lives in the water with gills and fins.
5. Area of land where all of the water that falls in it (rain and snow) drains to a common outlet.
7. Harmful materials in the environment.
9. This common pet's waste should be picked up and placed in the trash so it doesn't get carried to the creeks and streams.
10. Flowing water, sometimes used for kayaking, canoeing, swimming or fishing.
11. Runoff from rain or snowmelt that drains to ditches, creeks, streams, catch basins and pipes.

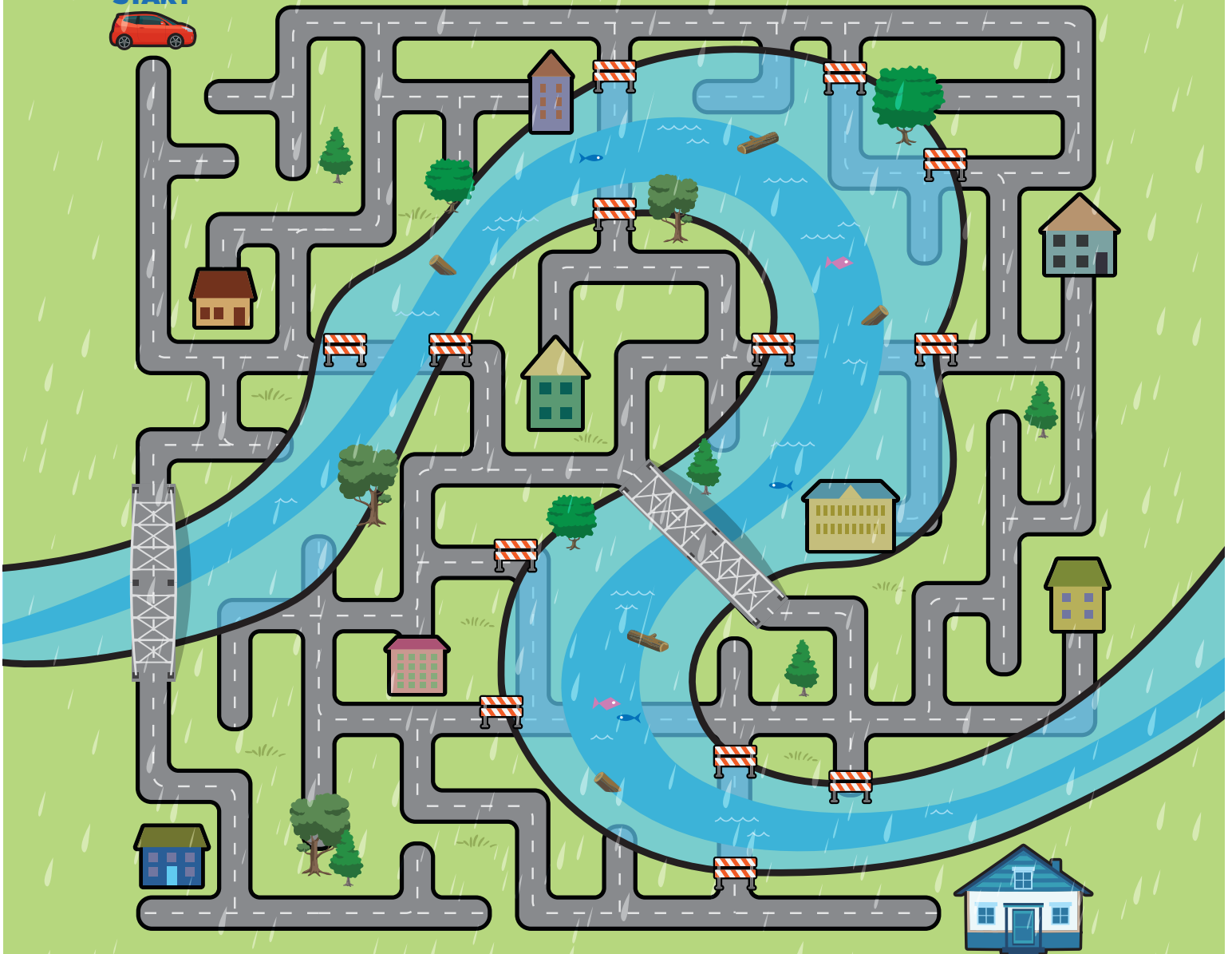
HOW TO STAY SAFE DURING A FLOOD

Can you help our volunteer navigate the roads and arrive safely at home?

Always avoid roads covered in high water or flood debris.

Take higher roads that are not under water, even if it means a longer trip.

START



FINISH

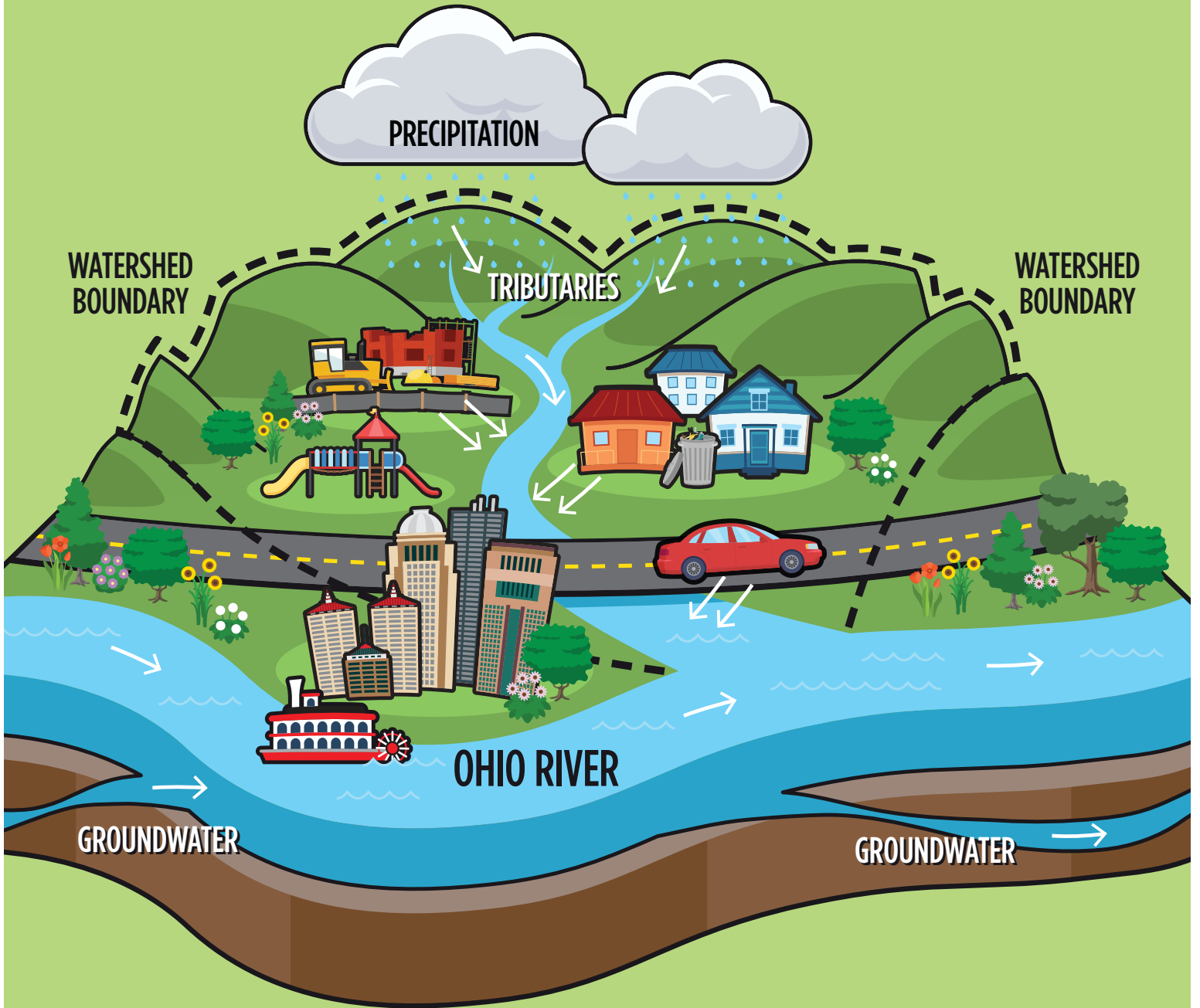


TURN AROUND, DON'T DROWN

WHAT IS A WATERSHED?

A watershed is the area of land where all water running off the land drains to the same location.

This location can be a stream, river, lake, wetland or ocean. No matter where you live, work, or play, you are in a watershed. A watershed can be millions of square miles (like the watershed for the Mississippi River) to a few acres (like the watershed of a farm pond). All watersheds in Jefferson County eventually drain to the Ohio River.

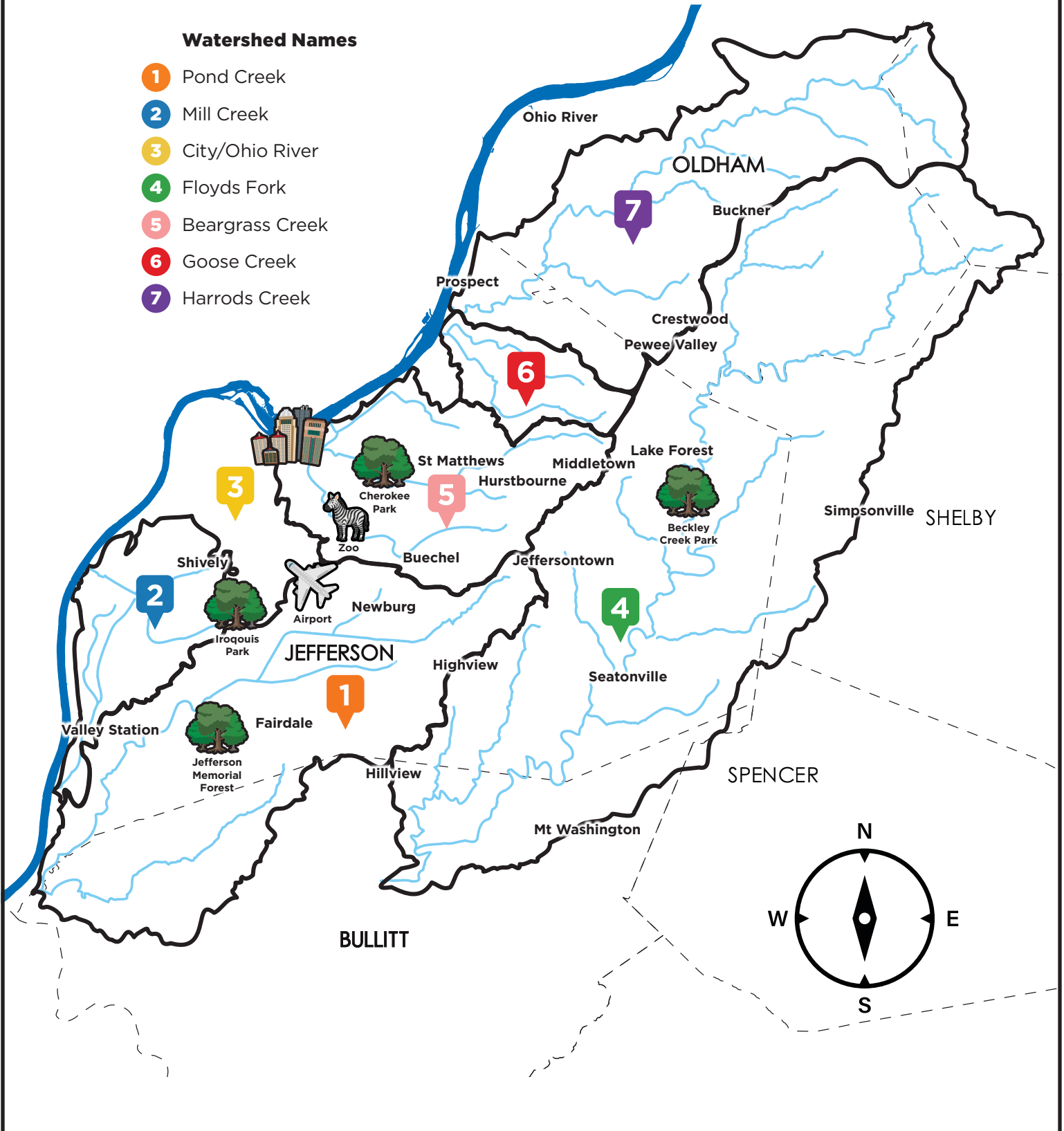


FIND YOUR WATERSHED

Color in each watershed according to the color key.
Do you know which watershed you live in?

Watershed Names

- 1 Pond Creek
- 2 Mill Creek
- 3 City/Ohio River
- 4 Floyds Fork
- 5 Beargrass Creek
- 6 Goose Creek
- 7 Harrods Creek

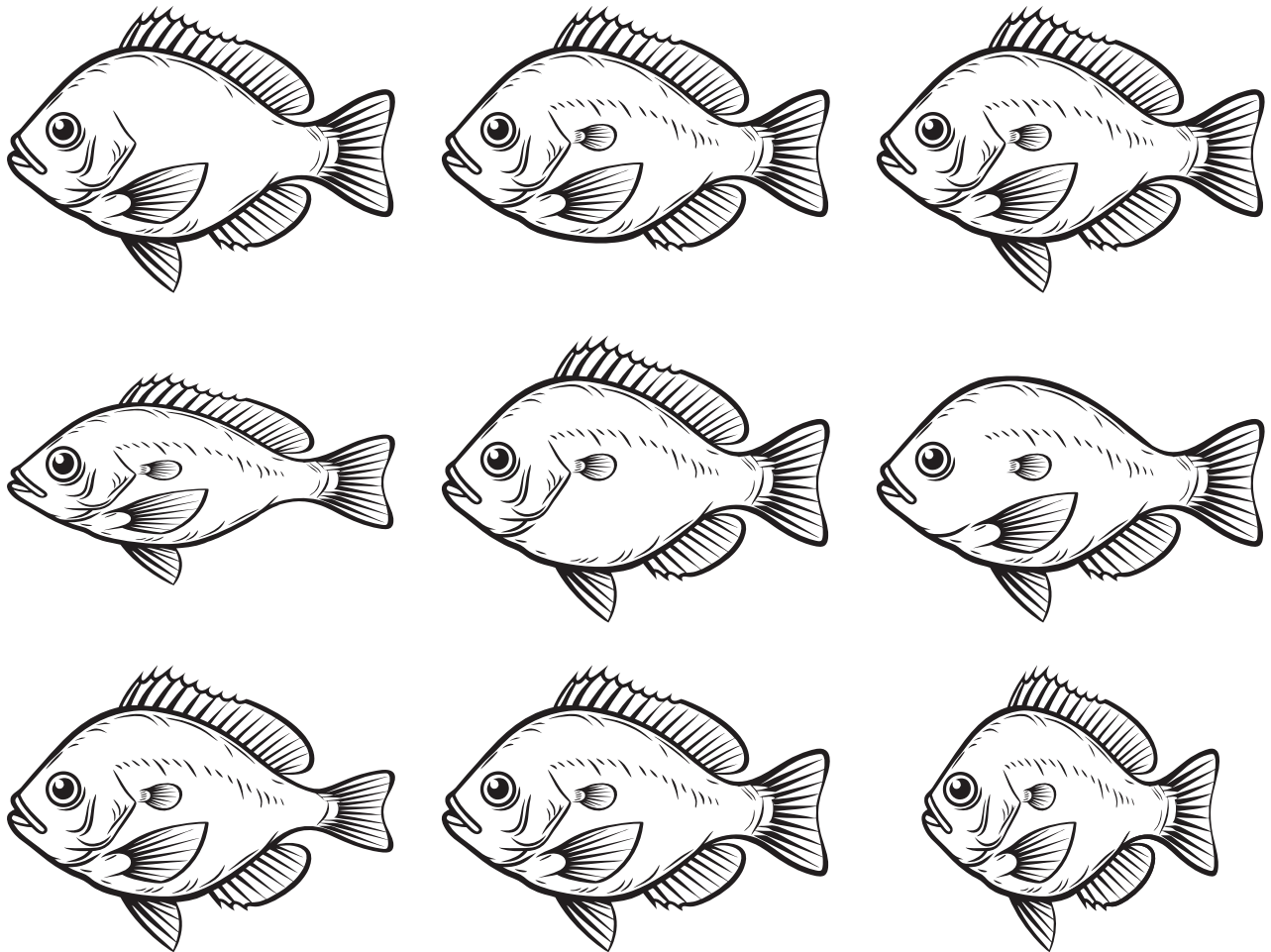


FIND THE IDENTICAL LONGEAR SUNFISH

Have you ever wondered how we know if a creek or stream is healthy? At MSD, we use water quality indicators to help us find out! Fish and tiny water insects are great indicators because they live in the water all the time. If the water is clean and healthy, many different kinds of fish and insects can survive there.

Fertilizers, pesticides and even dog poo can get into the stream when it rains, making it harder for wildlife to live there. Some fish and insects, like stoneflies and Longear Sunfish, need very clean water to live. If we find lots of these, it's a good sign! Other critters, like leeches and worms, can live in dirtier water. If we mostly find those, it tells us the stream may be polluted. By studying fish and insects, MSD helps protect our creeks—and all the plants, animals, and people who depend on clean water!

Can you spot the differences? Circle the two Longear Sunfish that are identical.



Meet the Longear Sunfish

The Longear Sunfish (*Lepomis megalotis*) is a small, highly colorful native fish abundant in Kentucky streams, rivers, and the Ohio River. They prefer clear, shallow pools with gravel or sand bottoms and are commonly found in water bodies managed by Louisville MSD.



LouisvilleMSD.org/Mandy