Discover Storm Water

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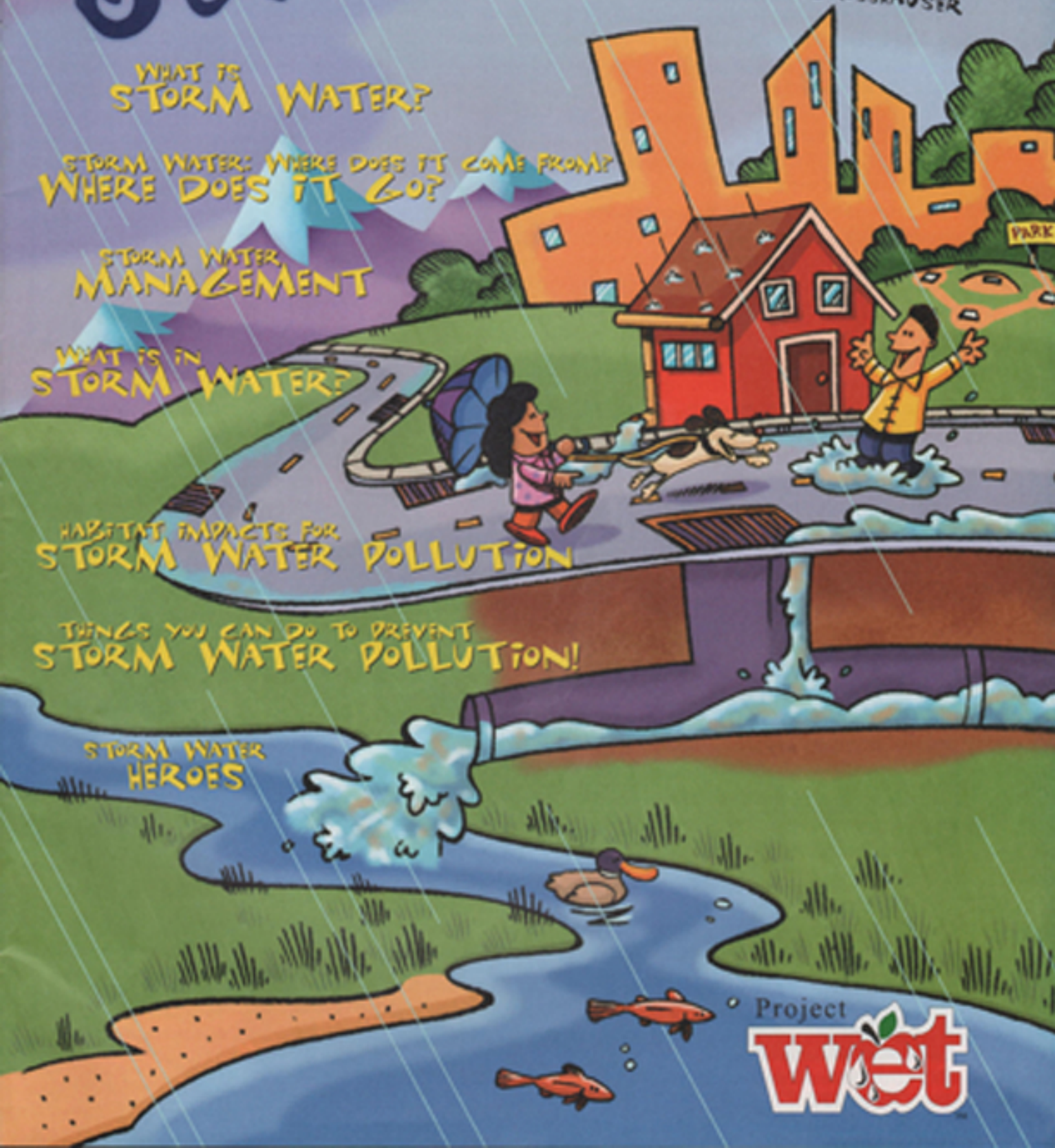


Project WET

WHAT IS STORM WATER?

Storm water is water that falls from the sky as rain or snow. Wherever you live, whether it's a very wet or very arid climate, storm water occurs. When water falls to earth as rain or snow, most of it seeps into the ground. If the ground is **saturated**, frozen, or covered with **impermeable surfaces** like a concrete sidewalk or a paved parking lot, the water flows over the land, creating what's known as storm water **runoff**.

Maybe you've heard people say that rain washes the streets clean, but have you ever thought about where that water ends up? Storm water runoff can add needed water to streams, lakes, and wetlands, but it can also cause flooding, erosion, and pollution problems. Storm water by itself is necessary and good, but when it passes through urban areas like cities or towns it can pick up pollution, and this can become a big problem.

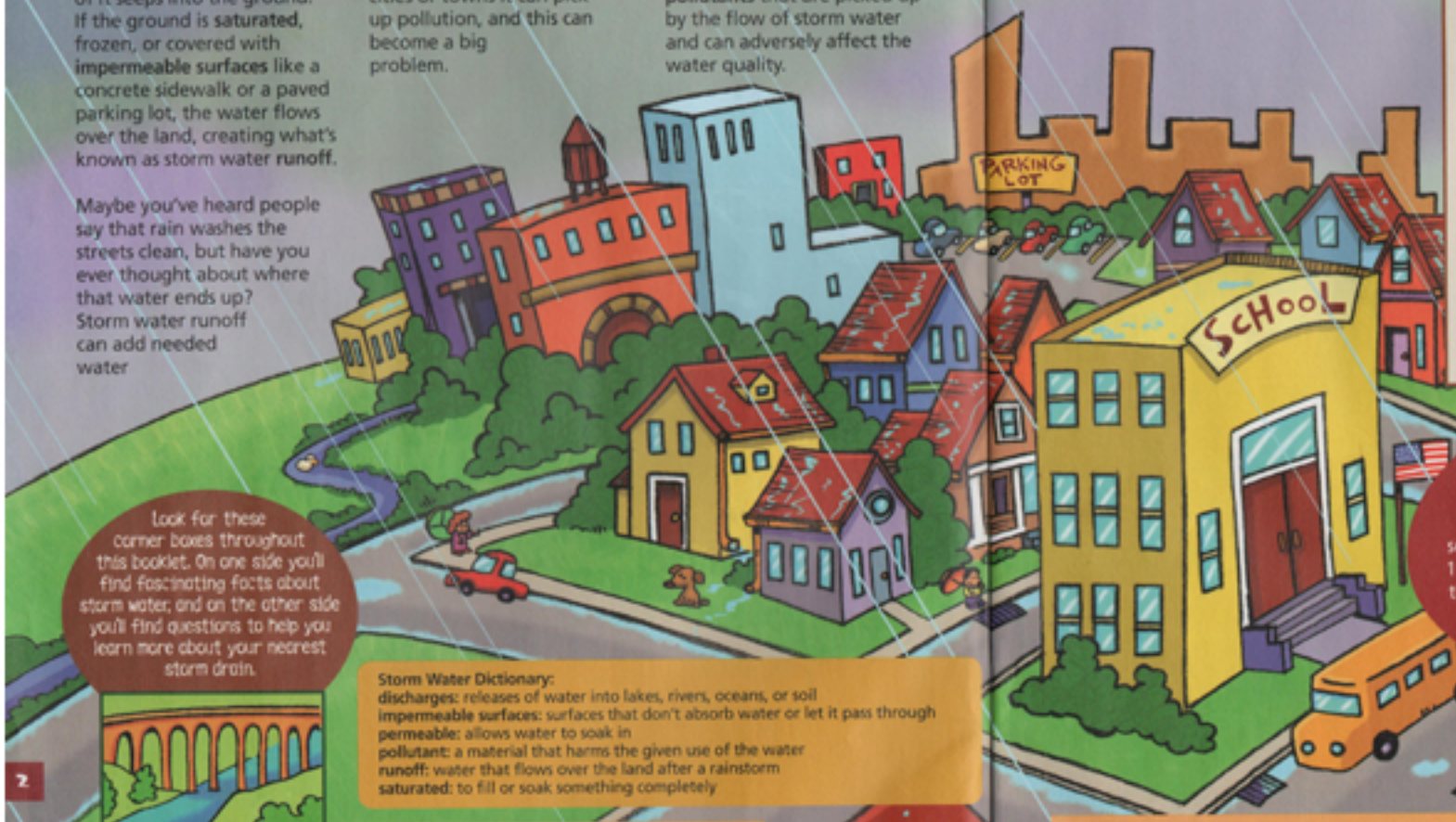
Storm water **discharges** are generated by runoff from land and impermeable areas such as paved streets, parking lots, and building rooftops during rain and snowfall. These surfaces often contain **pollutants** that are picked up by the flow of storm water and can adversely affect the water quality.

A-MAZE-ING STORM WATER

Try this activity to see how storm water can travel. Cover a piece of cardboard with wax paper. Use clay to create a maze similar to city streets, parks, and streams. Add sponges to represent **permeable** areas, such as wetlands or soccer fields. Place a large drop of water at the start of your maze and tilt the cardboard until the water travels to the end. As it moves, you can have it travel through spots containing ingredients that represent pollution. How does the appearance of the water change? Would you want to swim in this water? How much water stayed in the sponges?

POLLUTION

powdered cocoa	=	sediment or soil
green food coloring	=	fertilizers
candy sprinkles	=	pet waste
paper clips	=	litter
grass clippings	=	grass
vegetable oil or soy sauce	=	oil & gas from cars
salt	=	road salt



Look for these corner boxes throughout this booklet. On one side you'll find fascinating facts about storm water, and on the other side you'll find questions to help you learn more about your nearest storm drain.

In AD 62, the Romans brought their skill of water collection to England and helped build drains all over the country.

Storm Water Dictionary:
discharges: releases of water into lakes, rivers, oceans, or soil
impermeable surfaces: surfaces that don't absorb water or let it pass through
permeable: allows water to soak in
pollutant: a material that harms the given use of the water
runoff: water that flows over the land after a rainstorm
saturated: to fill or soak something completely

TRY THIS

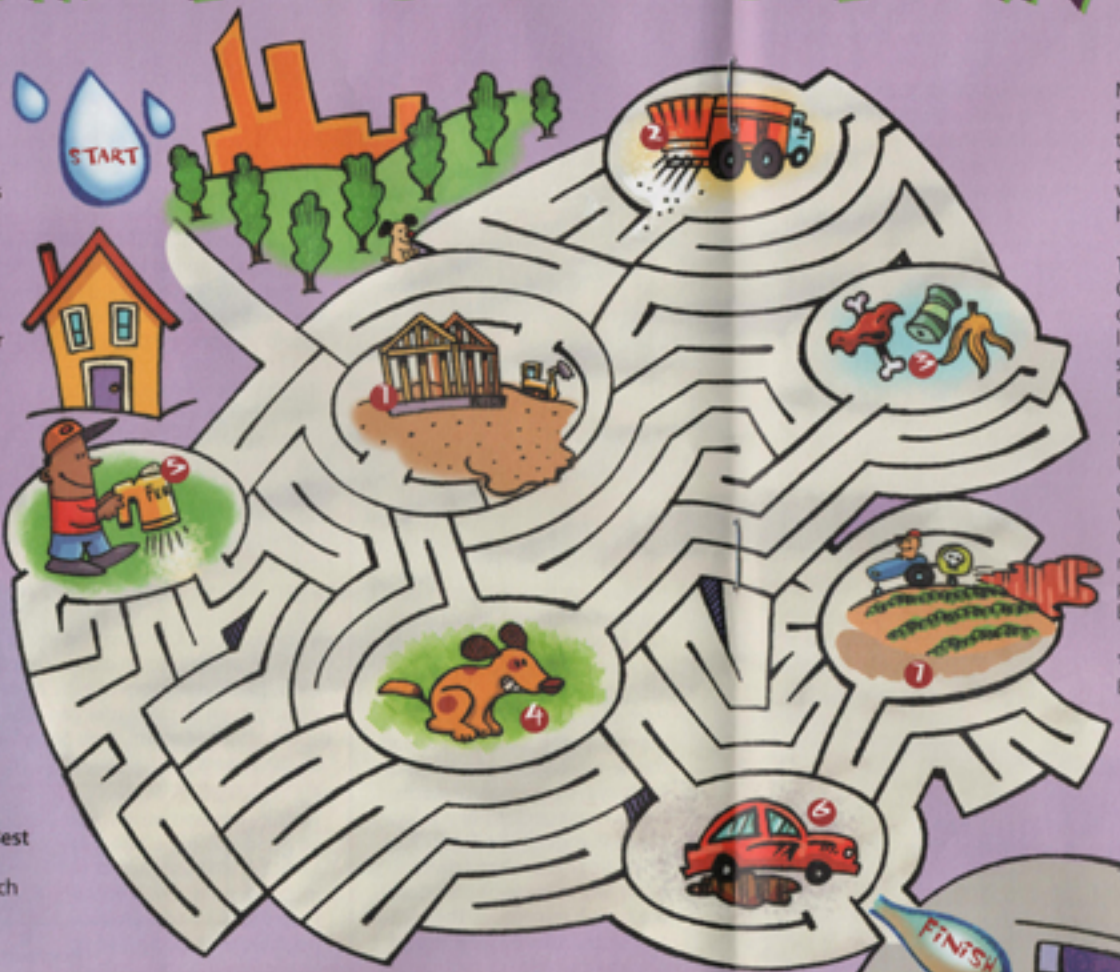
Here is a math problem to show how storm water runs off different surfaces. Imagine a 3-hour rainstorm. Each hour, 1/2 inch of rain falls to the earth. On a soccer field, 60% of the rain soaks into the ground. On a parking lot, only 1% of the water soaks into the concrete. At the end of three hours, how much rain (in inches) has run off from both surfaces? Check the back for the answer.

How far apart are the grates on your neighborhood storm drain? Observe carefully and write the answer in here.
_____
(Note: Some storm drains have large openings. Always use care, and NEVER reach any body parts into a storm drain. Stay on the sidewalk, wear bright colors, and go with a buddy.)

WHAT IS IN STORM WATER?

You've learned about the three ways storm water can move (soak in, run off, flow into). Let's learn more about its journey. It's possible for storm water to pick up many different pollutants as it flows over the land. This produces a **cumulative** effect and can greatly decrease water quality. The pollutants in storm water can make it unsafe for humans, plants, and animals. The pollution in storm water is considered **nonpoint source pollution**.

So where does all this storm water pollution come from? Lots of places. Travel through the maze to see some examples. You'll see why storm water management is important and it's up to all of us to do our part to keep it clean. On page 13 you'll learn ways to prevent pollution, called **Best Management Practices**, or **BMPs**. Fill one in under each type of pollutant.



Now try to unscramble the names of the pollutants you traveled through in the maze to learn how they enter storm water and why they are harmful.

1. lois/islt _____
Can enter storm water from construction sites or cleared land. Can block sunlight in streams and fill in waterways.
BMP? _____

2. ador slta _____
Used in icy conditions; it stays on the road until a storm washes it down a storm drain. Can change the **salinity**, making it hard for many plants and animals to live.
BMP? _____

3. eirttl _____
Enters storm water through careless actions by humans. It's an eyesore and it can harm animals, clog pipes, and degrade water quality.
BMP? _____

4. tep ewsat _____
Enters storm water when owners don't clean up after their animals. It can cause algae growth, which hurts lakes and can make people sick.
BMP? _____

5. ferretziil _____
Many people use too much of this on their lawns, and it can run off after a storm. It can cause breathing difficulties in people, and algae growth in water, which can lower the amount of oxygen in the water.
BMP? _____

6. lio/sga _____
Drips from cars and stays on roadways until a storm washes it down a storm drain. It can make people and animals sick.
BMP? _____

7. speesdtici _____
Used on agricultural crops, but also used in residential areas to control pests. It gets washed off of crops or lawns and can enter storm water. It can make people and animals sick.
BMP? _____

Storm Water Dictionary:
algae: simple plants without roots that grow in water and can worsen the water quality
cumulative: increasing with each addition
nonpoint source pollution: pollution that comes from many different sources, making it difficult to pinpoint one specific source
salinity: saltiness of water

One gallon of used oil can ruin 1,000,000 gallons of fresh water, enough to supply 50 people with water for a year.

What could happen if the holes in a storm drain were tiny?