



# NATURE NOTEBOOK



2023  
YEAR OF THE TRAIL



[www.stormwatersmart.org](http://www.stormwatersmart.org)



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## Activity Pages





# SORT IT OUT!



<<< How would you sort out this mess of trash? Put a check mark next to the items that can go in the recycling bin, and put an "X" next to those that should be thrown away. Turn to page 13 for answers and tips!



**Do you know what can be recycled and why? Many of us only "sort of" know which items can go in the recycling bin. See page 13 for some easy rules to help you sort it all out!**



If you could only recycle one thing, what would it be, and why? Many materials can be made into something new 4-6 times, but in the end, they will become disposable products that need to be thrown away in the trash. There is one material, however, that can be recycled an **infinite** number of times! Do you know what it is? Check your answer on page 13!





2023

# YEAR OF THE TRAIL

Win trail bikes,  
helmets, water bottles, and more!!

## SMART Contest!



Calling all 3rd, 4th, & 5th Graders  
in Alamance, Davidson, Forsyth,  
Guilford, Randolph, and  
Rockingham Counties!

Draw or paint a picture  
that shows how you would  
enjoy spending time on a  
nature trail near you! Prizes  
include trail bikes, helmets,  
reusable water bottles,  
and more!!



SCAN ME

**Contest  
begins  
MARCH 18  
and ends  
JUNE 10,  
2023!**

Contest begins March 18 and ends June 10, 2023, but there are more ways to win prizes now through the end of the year! Nature lovers of all ages in the six-county area can enter to win **Year of the Trail** and **Stormwater SMART** swag by answering five questions about the fun facts found here in the Nature Notebook. Use the QR Code to visit the contest page and enter! Questions? Email us!

[stormwatersmart@ptrc.org](mailto:stormwatersmart@ptrc.org)

# Sketch It Out!



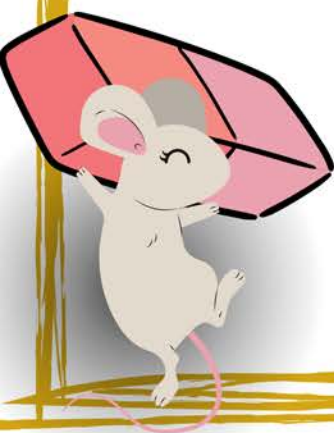
Use this page to practice some ideas for your trail drawing. Ask yourself:

- Can you see water near your trail? Is the water moving (like a creek, stream, or river), or is it still (like a lake or pond)?
- What bugs, birds, and critters are here? How about other people?
- For plants, think about trees, shrubs, grasses, flowers. What else? Moss? Fungi?

## One Way to Draw a Turtle!

- 1.
- 2.
- 3.
- 4.
- 5.
- 6.

Your turn to try!







# CREEK WEEKS

in the Piedmont!

Creek Weeks happen in cities, counties, and regions all over North Carolina. It's a time where local governments get together to host events like park and paddle cleanups, water-themed trivia nights, guided hikes, and more!



Scan the QR Code to visit the hub page for Creek Weeks in the Piedmont Triad! Find events, sign up to help, and get free Creek Week swag!



# If it's in the **street**, it's in the **stream!**

**W**hen rain hits a hard surface, it becomes **stormwater runoff** and picks up pollution like motor oil, chemicals, and litter. It flows into storm drains and ends up in the nearest creek or stream.

The water does NOT get treated or cleaned on the way, and all of these pollutants cause problems for people, wildlife, and plants!



Creek Week is a time to **learn** about the waterways in our area, **help out** by joining cleanups, and **have fun** spending time outdoors with friends and family!



See more ways to help on Page 14!



**Learn!**



**Help Out!**



**Have Fun!**



# Leaf Identifier

WHOOOooooo can find these NC native trees on our local Piedmont trails?



Places to go where the native trees

# Grow!





# NATIVE FLOWER POWER!



Soil and sediment are the #1 pollutants in North Carolina's waterways.



Heavy rains cause stream banks to erode, especially lawns that are mowed to the edge.



You can help by planting seeds of wildflowers that are native to NC in the "buffer zones" of creeks & streams.



Native plants help prevent erosion by keeping soil in place. They require less water and little-or-no pesticide and fertilizer to thrive!



Plant native flowers, shrubs, grasses, and trees in the "buffer zones" next to creeks and streams to help protect the water.

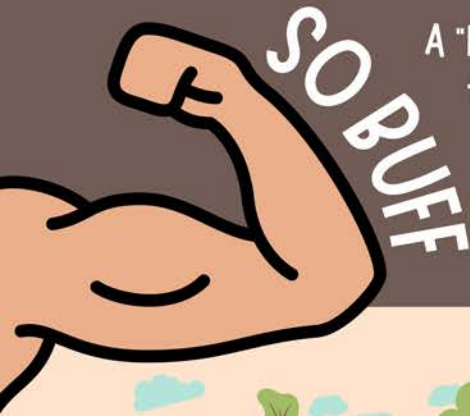


Wildflower seeds are easy to plant! Press the seeds into the soil and keep the ground moist until the seedlings take root.



DID YOU KNOW?

We'll send you a free seed packet of native wildflowers with original illustrations by North Carolina nature artist Maddie James! Scan the QR Code on page 2 and answer five questions about the fun facts in this Nature Notebook!



A "Buffer Zone" is a natural area on each side of a creek or stream that protects wildlife and water quality. A healthy buffer has a mix of native grasses, flowers, ferns, shrubs, and trees. Look at the illustration of a stream below. It's easy to see which buffer is **BUFF!**





WHAT'S THAT WATERWAY?



Our Part of the Piedmont





**WORD SCRAMBLE!** Using the map on Page 8 and the hints below, can you name these Piedmont waterways? See Page 13 for the Answer Key!

**1** This is the biggest river in Alamance County and empties into Jordan Lake (near Raleigh). W H A \_ \_ \_ \_

**2** The Cape Fear shiner, a critically endangered minnow, inhabits this "not shallow" river. P E D E \_ \_ \_ \_

**3** This river is one of the longest in NC, flowing 215 miles! N K D A Y I \_ \_ \_ \_

**4** I wonder who gave this creek such a dirty name? D U Y M D \_ \_ \_ \_

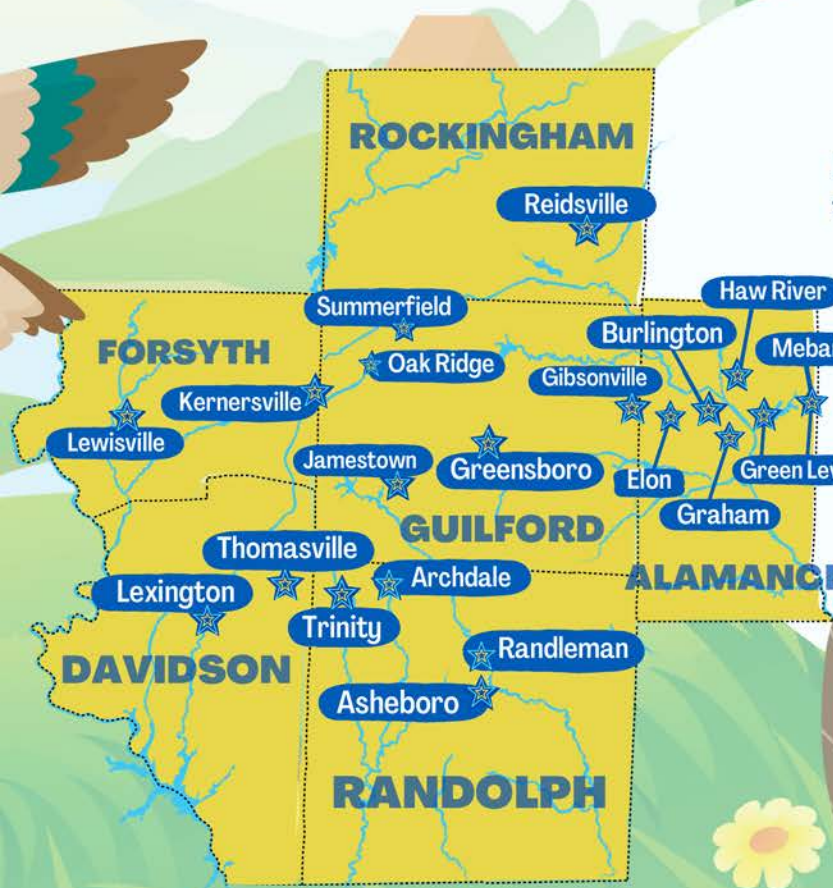
**5** This creek empties into High Rock Lake. B O B S T A T \_ \_ \_ \_

**6** Before 1940, the "Uharie" River became this! Also called "Wharie" and "Voharee". U \_ \_ H A \_ \_ R I E

**7** Not "Cursing" Creek, but pretty close! S A G E R N I W \_ \_ \_ \_

**8** This river is part of the Roanoke River Basin. Tastes good with pickles! Y O A M \_ \_ \_ \_

**9** Fill in the missing vowel to name this big river, which crosses the state line between Virginia and NC 8 times! D \_ \_ N



## Waterways Connect Our Communities

In our part of the Piedmont, local governments work together because we know that healthy people need healthy waterways, upstream and downstream and all around the streams! That's why we talk about water quality in schools and libraries.

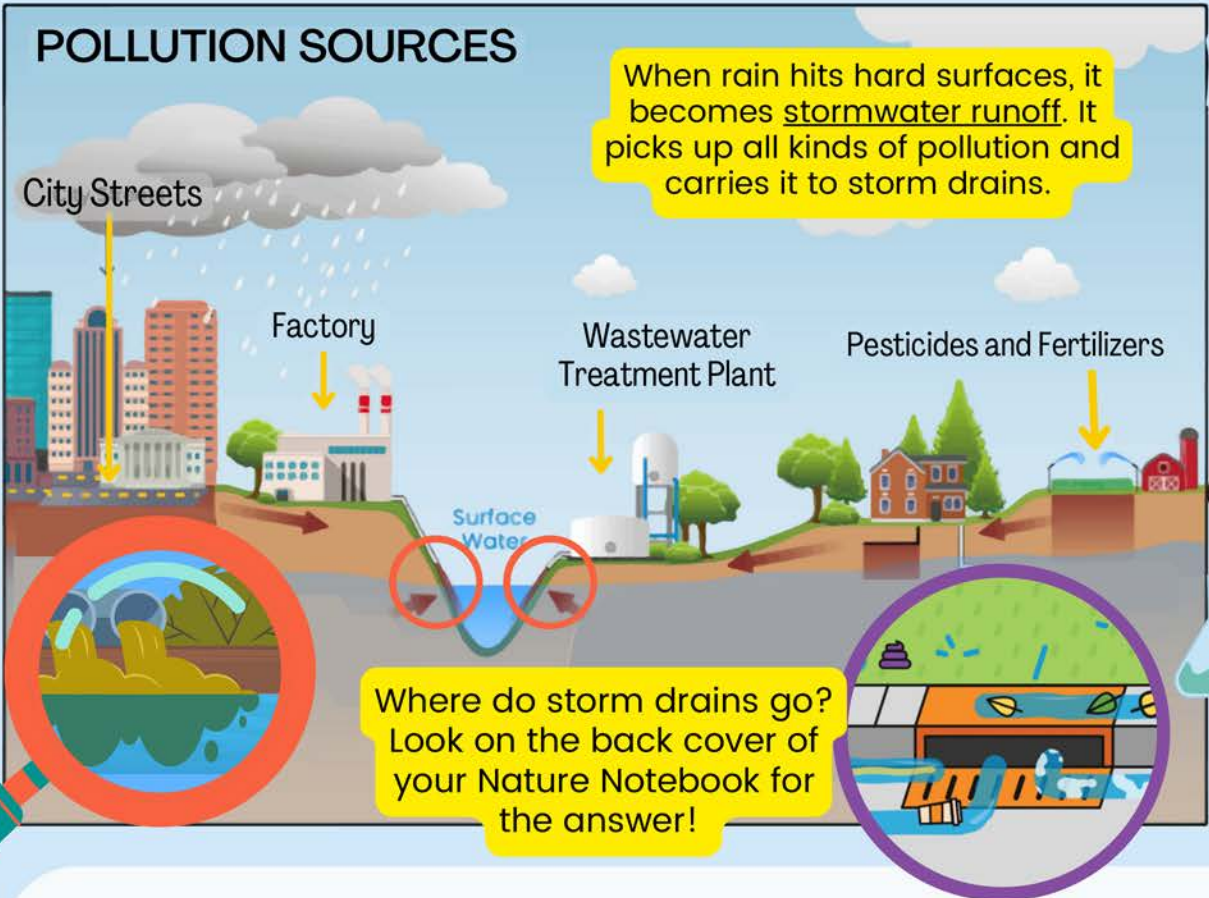
All of the partners on the map are "Stormwater SMART" -- and so are YOU!







The **Clean Water Act** was created in the year 1972 to help humans have safe drinking water and stay healthy. Our federal **Environmental Protection Agency (EPA)** sets standards for clean water and enforces limits on pollution. If the environment is suffering from too much pollution, the EPA requires states to find the source of the problem and fix it. Learn about where pollution comes from in the picture and activity below!



**Imagine you are a scientist...**



You are a scientist, and your job is to test the water in the lakes and rivers near a town. When you do, you find lots of pollution in the water: bad bacteria, excess nutrients, litter, chemicals, and dirt. Help the town figure out where the pollution might be coming from by looking at the whole **watershed**. A watershed is an area of land that drains or “sheds” water into a specific waterbody. Every body of water has a watershed.

List all of the ways that people are using the land in the picture above. Can you think of some other ways to use the land that are not shown here?

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# Spot the Difference!

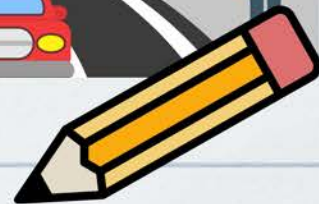
Compare the two illustrations and find the differences! When you're done, turn to Page 15 for the answer key!



You can see how one picture is polluted while the other is not. Some types of pollution are harder to change than others. What are some things YOU can do to prevent pollution? Write your ideas below.



Example. Pick up litter on a cleanup





# 5 SIMPLE WAYS

For families to save money at home while keeping our air & water clean!

## CLEAN AIR



### 1 Don't idle if you can help it!

Idling can cost you an extra \$750 per year and wear out your engine. Running your air conditioner at the same time burns even more fuel.

### 2 Let the lawn grow - set mowers to 2" height

Taller grass shades roots and holds soil moisture better than shorter grass, so you'll need less water to keep the grass green. Mulching mowers help even more; leave the lawn clippings behind to hold in moisture.



## CLEAN WATER

### 3 Slow down and save.

Every 5 miles per hour over 60 can cost an extra 20-30 cents per gallon! It's a lot safer, too. According to the NC Dept of Transportation, speeding caused over 15,000 accidents in our state in 2019. Slowing down reduces stress AND saves money!

### 4 Don't drip and drive.

Tightening your fuel cap prevents leakage of 30 gallons per year! It also reduces the amount of stormwater pollution that gets into our waterways after a heavy rain.



### 5 Learn about Clean Fuel Advanced Technology (CFAT)



Scan the QR Code to learn "clean for health" fuels and technologies like solar, electric, biogas, natural gas, liquefied petroleum gas (LPG), and alcohol fuels including ethanol.

## CLEAN AIR & WATER BEGINS WITH YOU & ME!



## SORT IT OUT! (PAGE 1)



1 - 2 - 3! These items can be recycled as long as they are **empty, clean, dry, and loose** in your recycling bin (not bagged).

- 1 Metal food and drink cans
- 2 Plastic bottles, tubs, and jugs
- 3 Paper & cardboard

Don't recycle small items (like travel-size bottles) or wiry things that could get caught in the sorting machine, like hangers or silverware. **When in doubt, throw it out.**

Some materials are specific to where you live, like glass. Greensboro and Lexington have special drop-off locations for glass bottles. Scan the QR Code to get printable posters specific to your area!



If you only recycle one thing, **make it metal!** Metal can be recycled an infinite number of times!



## Spot the Difference!

- Birds flying
- Sad vs. happy sun
- Fence (keeping the animals out of the stream)
- The color of the stream
- More plants near the stream in the "buffer" zone
- Trash and litter on the ground
- Animal waste
- Trail vs. road
- Riding a bike instead of driving
- Charging station for electric cars
- Car idling
- Downspout on the house empties right into the stream
- Overfilled trash in the factory parking lot



## PAGE 11

- Regular parking lot vs. paving stones (this is called "permeable pavement" - it lets some of the rain soak into the ground instead of turning it into stormwater)
- Motor oil spill in the parking lot near the storm drain
- Construction site with exposed soil
- Old factory vs. new "green" factory!
- Doggy bag to scoop the poop!

## WATERSHED POLLUTION You're the Scientist! PAGE 10

The pollution was coming from all of the places where people use the land. How many ways did you see or think of?

Farms

Houses and neighborhoods

City streets (storm drains)

Factories

Businesses and schools

Construction sites

Wastewater Treatment Plants

Broken sewer lines

Parking lots ...and many more!

# Answer Key

## WHAT'S THAT WATERWAY? PAGE 8

- 1 HAW RIVER
- 2 DEEP RIVER
- 3 YADKIN RIVER
- 4 MUDDY CREEK
- 5 ABBOTTS CREEK
- 6 UWHARRIE RIVER
- 7 SWEARING CREEK
- 8 MAYO RIVER
- 9 DAN RIVER



# HOW TO BE STORMWATER SMART

How do things like plastic bags, cigarettes and straws end up in our creeks and streams?

WHEN RAIN HITS HARD SURFACES LIKE PAVEMENT, IT BECOMES STORMWATER RUNOFF...



...AND CARRIES THIS NASTY STUFF STRAIGHT TO THE NEAREST CREEK, POLLUTING OUR DRINKING WATER AND HARMING WILDLIFE.



See our website for short animated videos about stormwater & more educational resources!



...AND PICKS UP PET POO, SOAP, GRASS CLIPPINGS, PESTICIDES, FERTILIZERS, LITTER, MOTOR OIL, & MORE...



YOU CAN HELP MAKE SURE ONLY RAIN GOES DOWN YOUR STORM DRAIN. TOGETHER WE CAN MAKE A DIFFERENCE!

[www.stormwatersmart.org](http://www.stormwatersmart.org)



Alamance County · Davidson County · Randolph County · Rockingham County · Archdale · Asheboro · Burlington · Elon · Greensboro · Gibsonville · Graham · Green Level · Haw River · Jamestown · Kernersville · Lewisville · Lexington · Oak Ridge · Mebane · Randleman · Reidsville · Summerfield · Thomasville · Trinity

Stormwater SMART Public Service Announcements are additionally supported by: Guilford County · Forsyth County · Clemmons · Winston-Salem



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REGIONAL PLANNING · STORMWATER SMART

