

STORMwater ACTIVITY BOOKLET



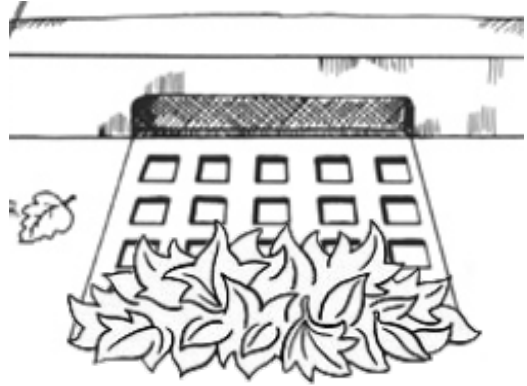
Compiled By: Lauren Young
Gibson-Thomas Engineering

☀ Summer ☀



Be sure to wash your cars in the grass or other landscaped area to prevent harmful chemicals from entering the storm drains.

🍁 Fall 🍁



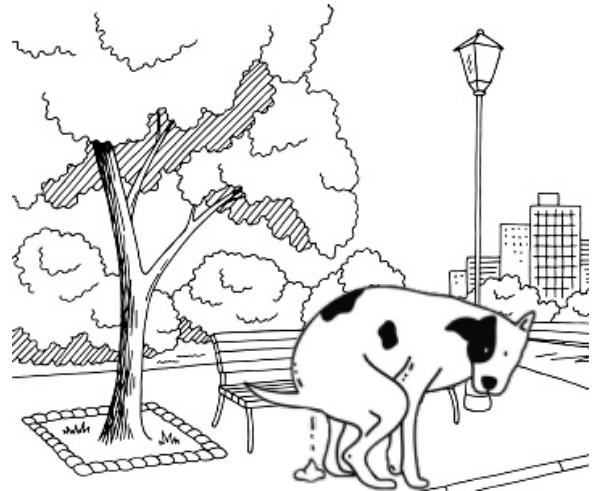
Make sure to rake and dispose of leaves during the fall to prevent storm drains from clogging.

❄ Winter ❄





























Avoid using salt as a deicer for your driveway as it's harmful chemicals can pollute stormwater runoff.

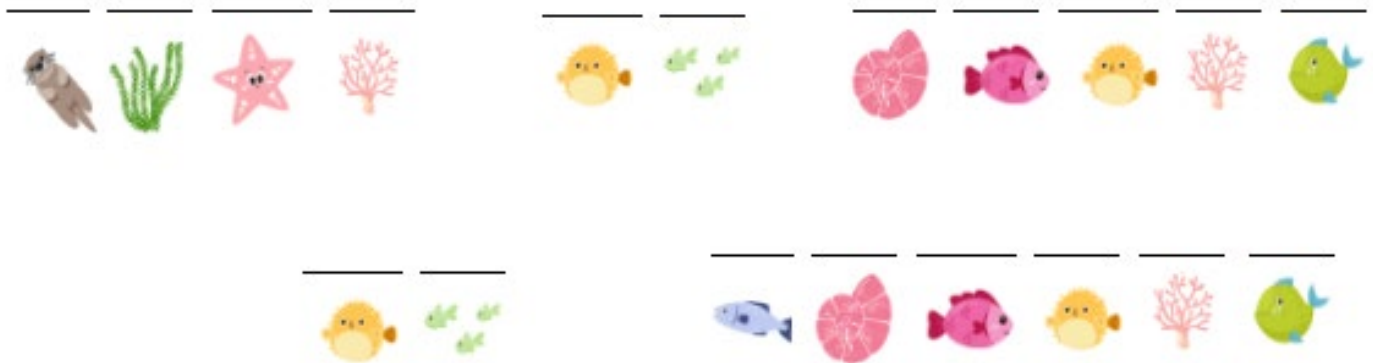
🌸 Spring 🌸



Clean up after pets to prevent harmful bacteria, parasites, and viruses from getting in our stormwater.

Stormwater Hidden Message

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



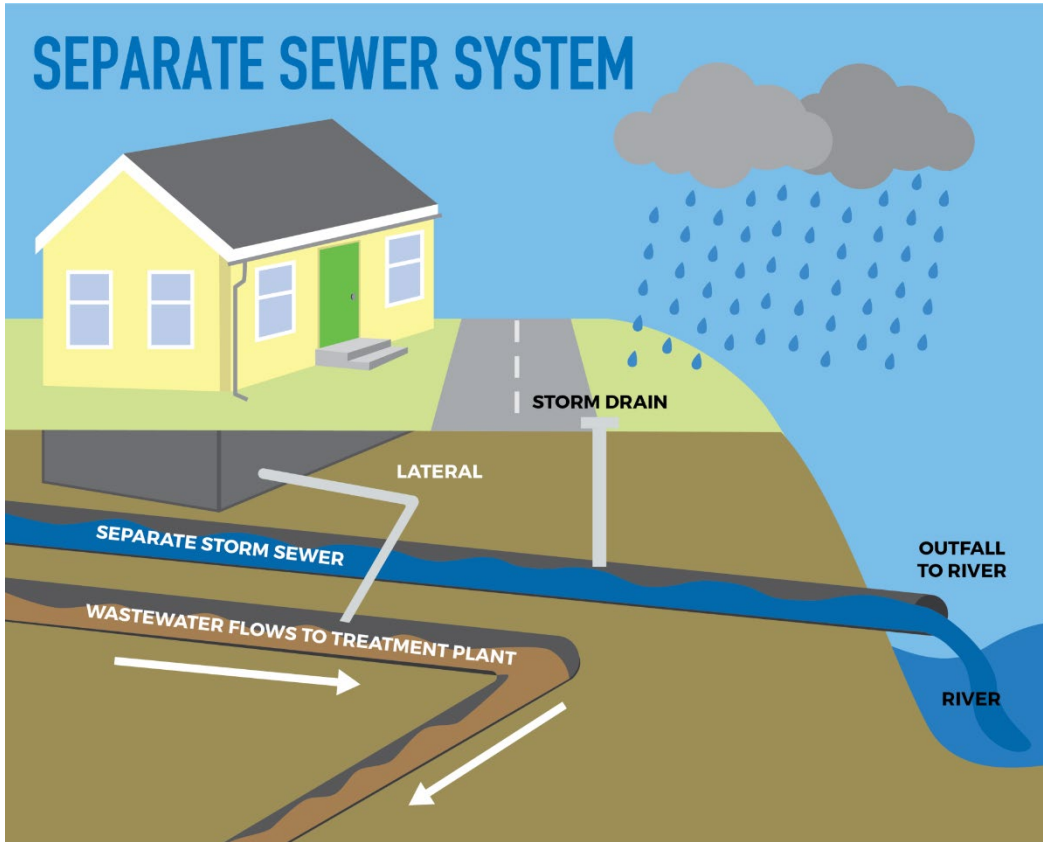
Fact: Pesticides such as weed, and bug killers are toxic to fish in low amounts resulting in fish death and decline in fish population. Pesticides enter fresh and marine waters when applied to lawn or agricultural field, and excess is washed into the water when it rains.

Types of Sewers

1. **Storm Sewers** – are designed to drain excess rain and groundwater from paved streets, parking lots, sidewalks and roofs. They transport stormwater (rain and melting snow) to the nearest lake, stream, or wetland.
 - Stormwater often contains materials found on streets and parking lots such as oil, antifreeze, gasoline, soil, litter, pet wastes, fertilizers, pesticides, leaves, and grass clippings.
 - Storm sewers can also get clogged with leaves, litter, and other debris when this happens there can be flooding.
2. **Sanitary Sewers** – When you flush the toilet or wash dishes that water is carried away from your home (or business) through small underground pipes until it reaches a wastewater treatment plant.
 - Wastewater is treated at a wastewater treatment plant to remove any pollutants before it is returned to the environment.
 - When you flush items that cannot be broken down by the surrounding environment, such as sanitary wipes, this interferes with the public wastewater system and potentially causes blockages and overflows.
3. **Combined Sewers**- They use a single pipe to carry both wastewater and stormwater runoff water to wastewater plants.
 - Combined Sewers are not used much anymore because when it rains a lot the system can't handle both the stormwater and rainwater which causes the sewer to overflow.

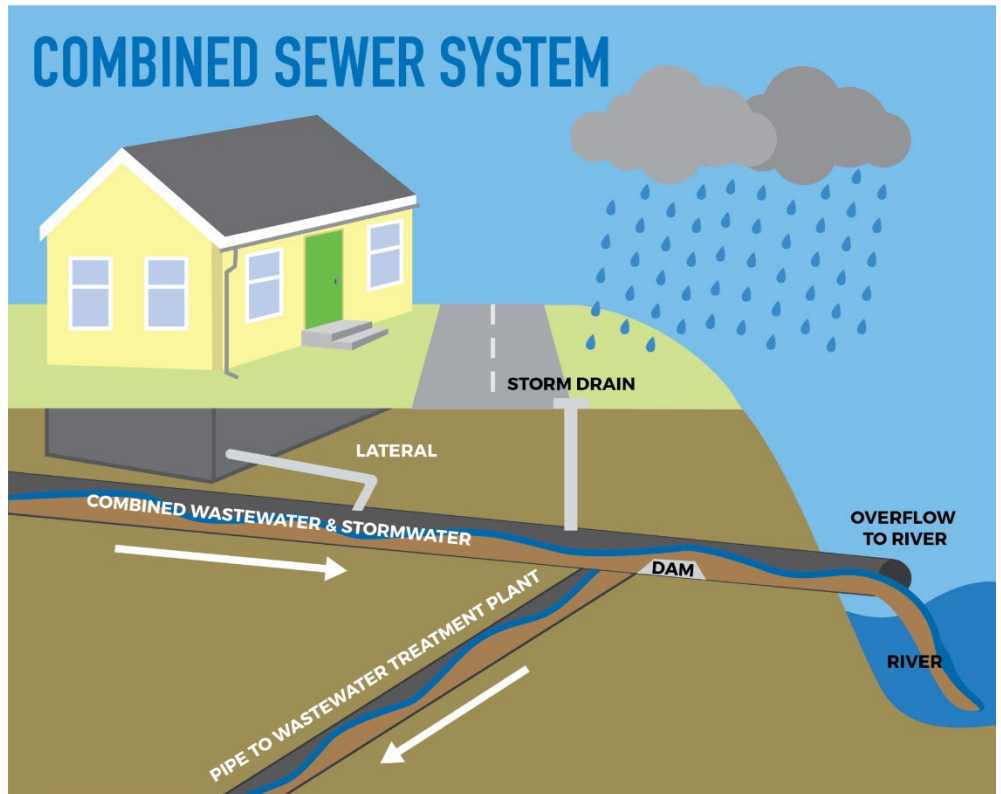


Sewer Systems



Separate Sewer System: stormwater and wastewater are collected in two different pipes.

Combined Sewer System: stormwater and wastewater are collected in the same pipe.



Stormwater Word Search

R E I M T S S D O G P O O P N
E R S S T N S E T A R T I N U
Z U S L F E S A S E V A E L T
I T W A S T E W A T E R M U R
L L P C P O L L U T A N T S I
I U R I E N C R O R C L S I E
T C L M G H I E E I A S E O N
R I R E T U H T E S I T D C T
E R S H V P E A D O G N I A S
F G S C A T V W E S O M M W D
T A A O I L L M S I A P E R R
U U G E E O L R S E N A N C A
I P R V D E E O R L L H T L I
N O I T C U R T S N O C R I N
Z N O T L E S S C S O O O L T

Stormwater
Salt
Stream
Wastewater
Nutrients

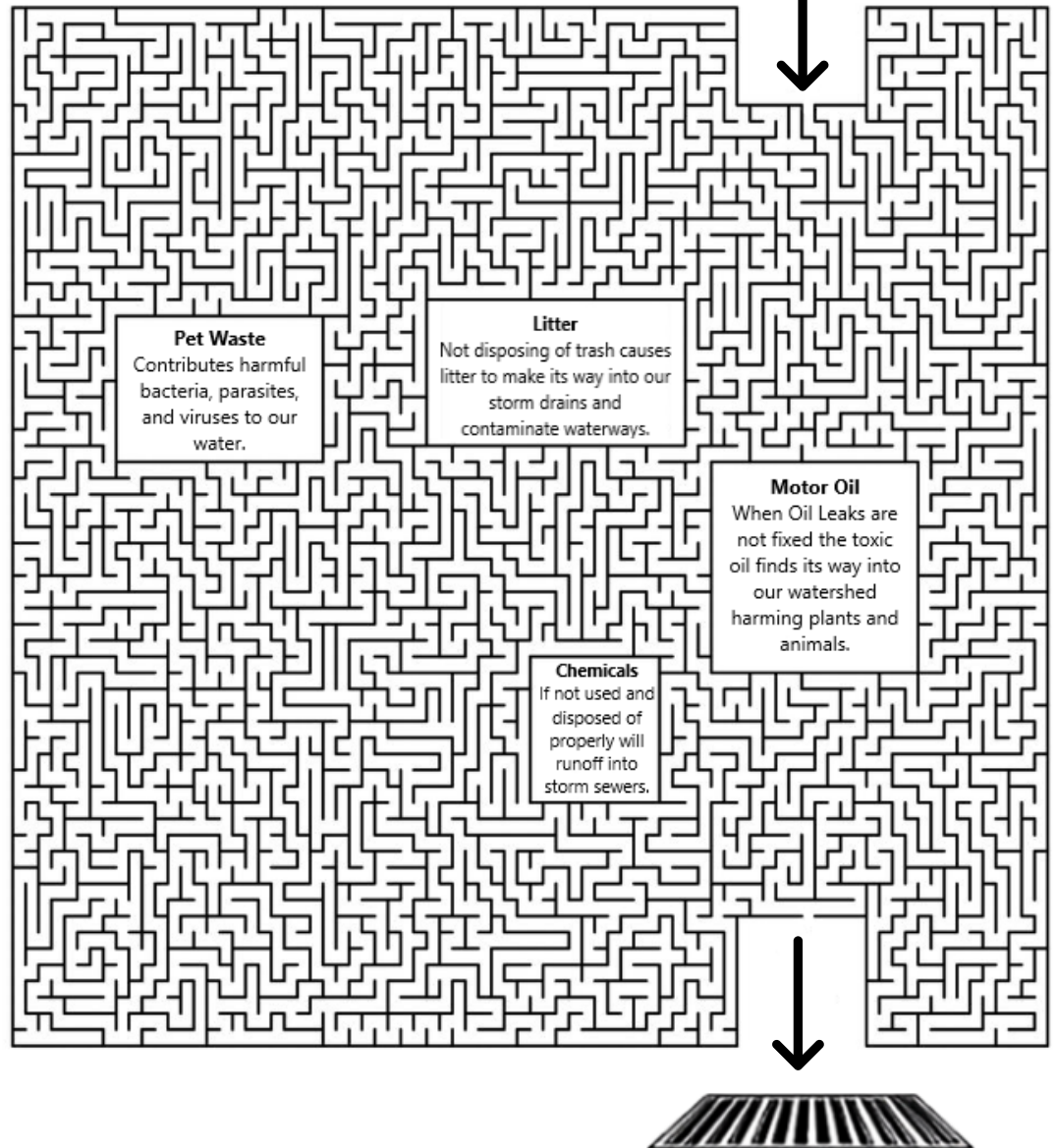
Pollutants
Chemicals
Fertilizer
Oil
Nitrates

Erosion
Vehicles
Dog Poop
Leaves

Drain
Construction
Agriculture
Sediment

From Storm Cloud to Storm Drain

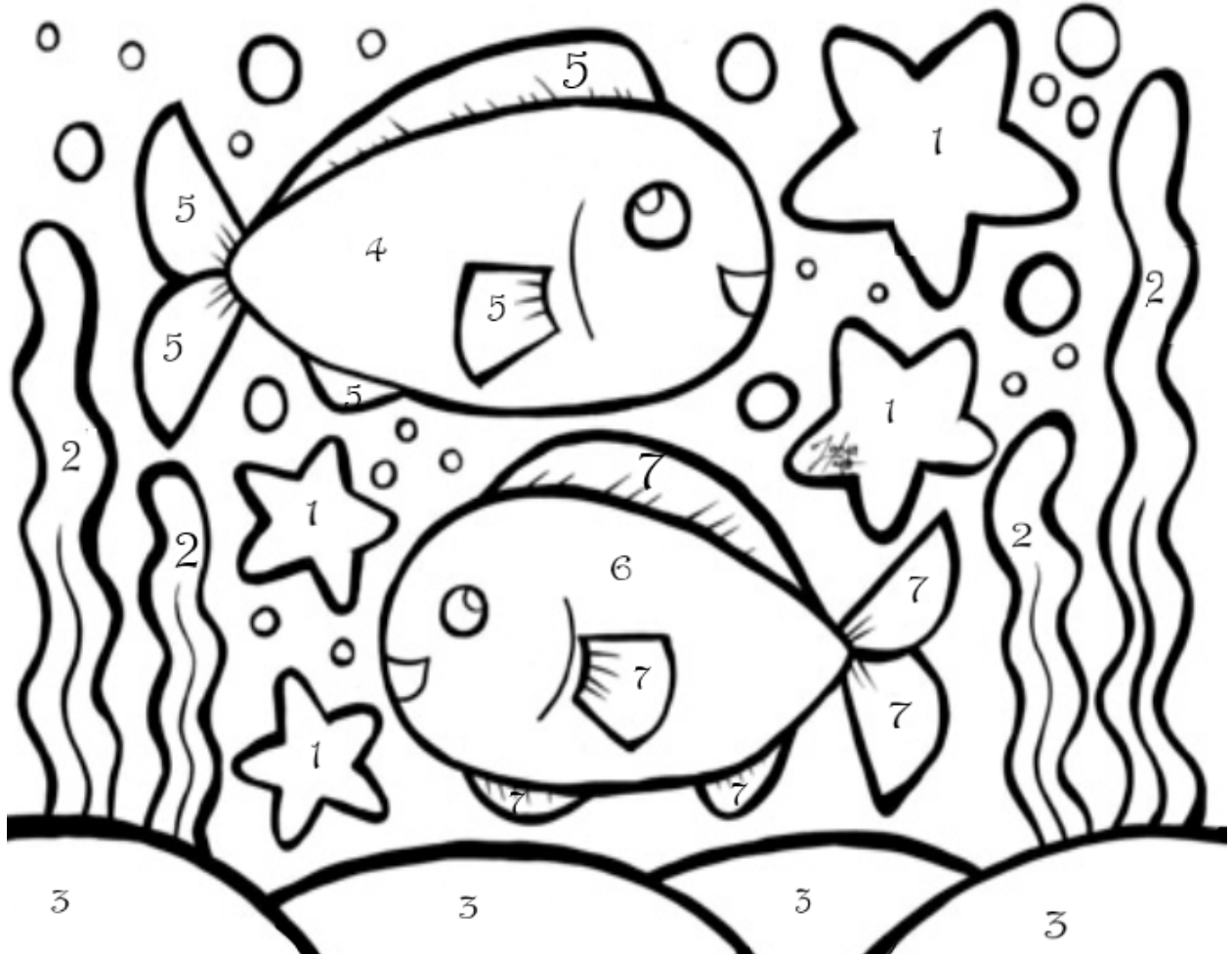
Help Droplet make it through the stormwater system, but watch out for what we might encounter along the way!



What solutions can you come up with to help droplet avoid these stormwater pollutants?

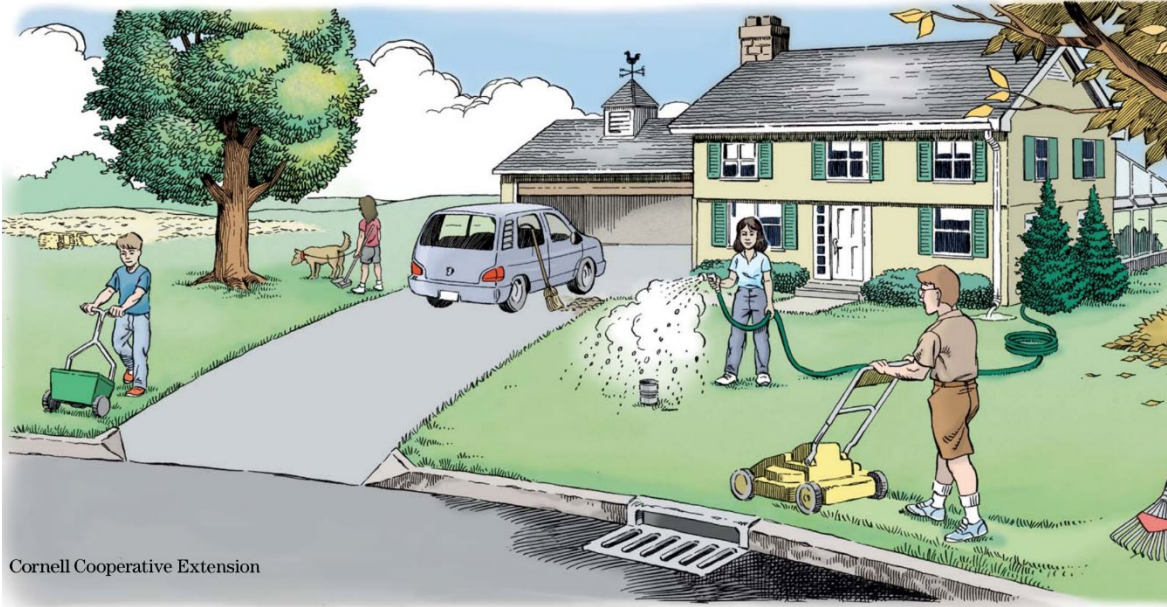
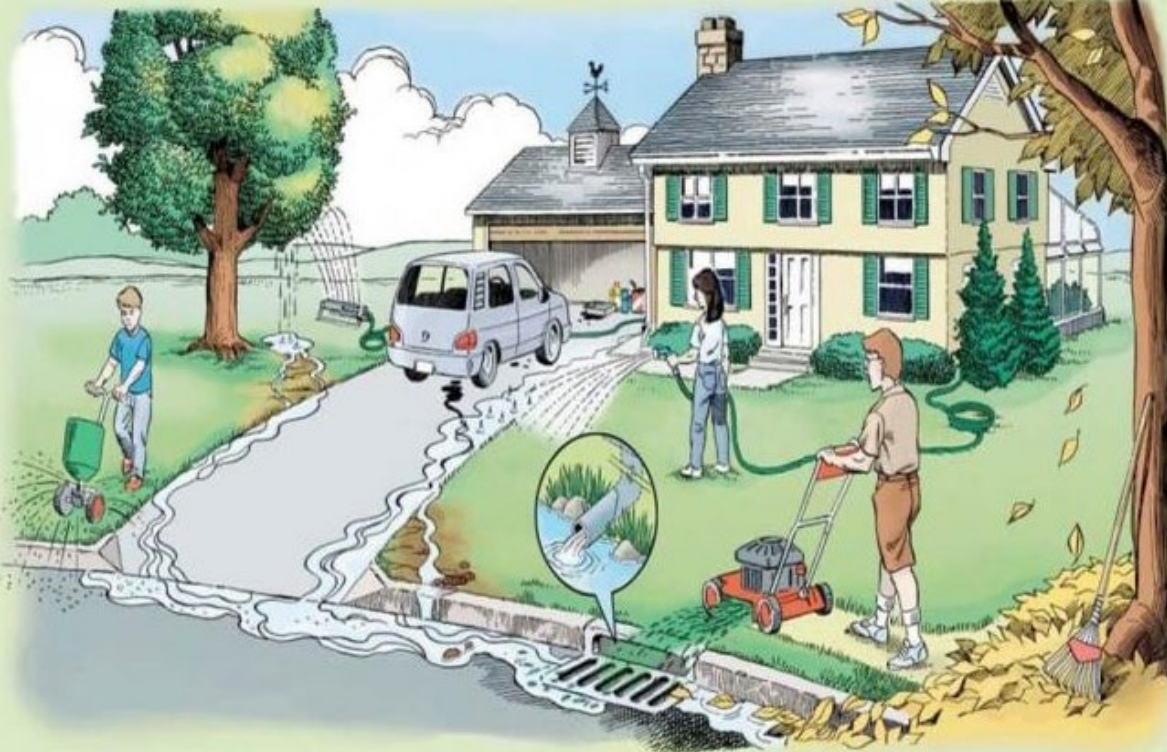
Color By Number

(Color in the Number with its Corresponding Color)



1. Yellow
2. Green
3. Tan
4. Orange
5. Light Orange
6. Purple
7. Pink
8. Light Blue (Bubbles)
9. Blue (Background)
10. Black (Fish eyes and Mouth)

Can you Spot the differences in how these families manage their Stormwater runoff? (At Least 6 Differences)



Cornell Cooperative Extension

(Credit: Cornell Cooperative Extension)

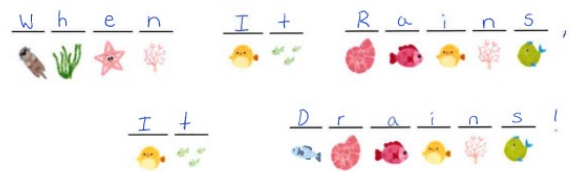
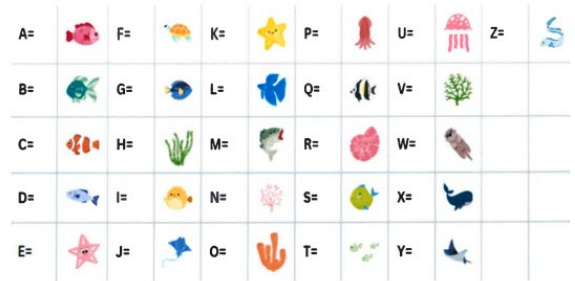
Stormwater Word Search



- | | | | |
|------------|------------|----------|--------------|
| Stormwater | Pollutants | Erosion | Drain |
| Salts | Chemicals | Vehicles | Construction |
| Stream | Fertilizer | Dog Poop | Agriculture |
| Wastewater | Oil | Leaves | Sediment |
| Nutrients | Nitrates | | |

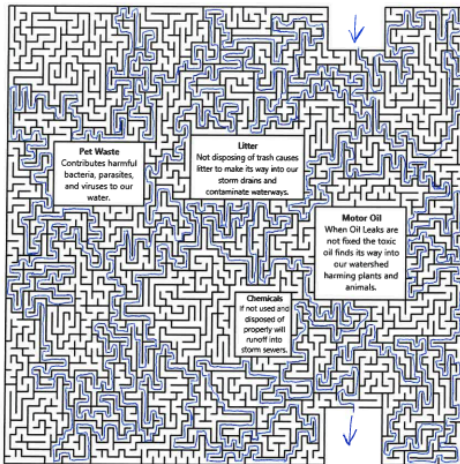
Answer Key

Stormwater Hidden Message



Cloud to Storm Drain

Help Droplet make it through the stormwater system, but watch out for what we might encounter along the way!



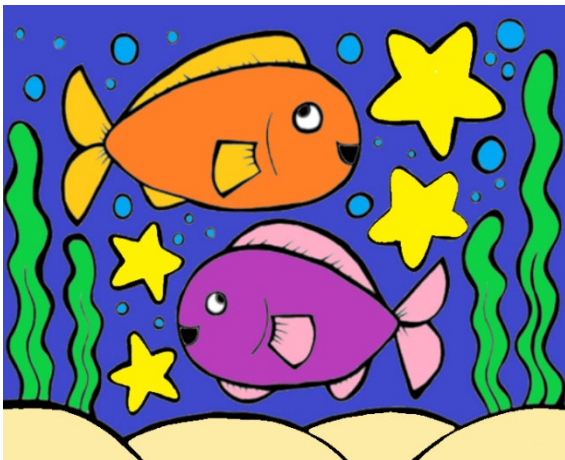
Pet Waste
Contributes harmful bacteria, parasites, and viruses to our water.

Litter
Not disposing of trash causes litter to make its way into our storm drains and contaminate waterways.

Motor Oil
When Oil Leaks are not fixed the toxic oil finds its way into our watershed harming plants and animals.

Chemicals
If not used and disposed of properly will runoff into storm sewers.

What solutions can you come up with to help droplet avoid these stormwater pollutants?



Hidden Message: When It Rains, It Drains!

Spot The Difference:

1. Sweeping rather than rinsing **Driveway** with water.
2. Cleaning up **Dog Poop**
3. Raking up and disposing of **Leaves**.
4. Disposing of **Oil**
5. Not **Overwatering** Lawn
6. Making sure **Fertilizer** and **Grass Clippings** don't get on the road.