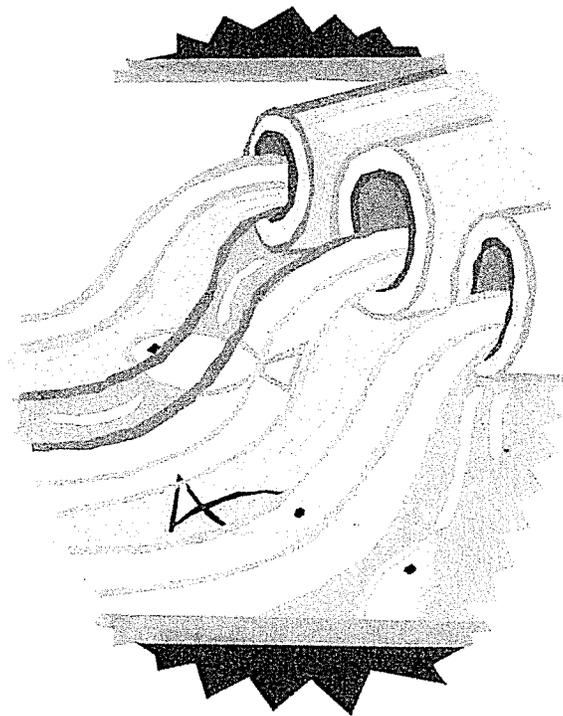
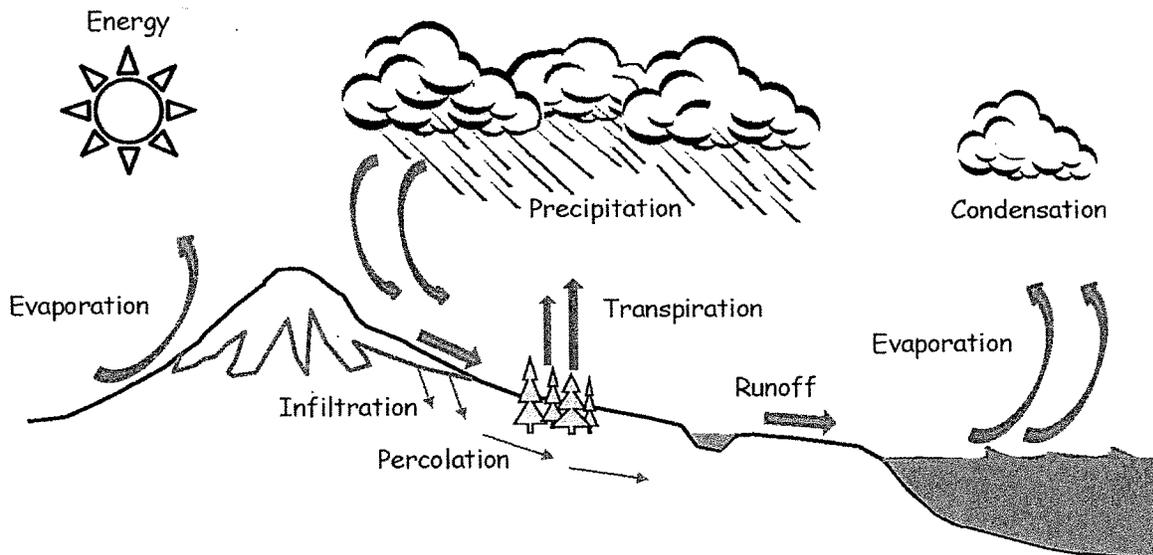


The Turtle Creek Watershed Stormwater Activity Book



An activity booklet designed to teach children about water resources and
stormwater pollution

The Water Cycle



Evaporation: When water is heated by the sun, it causes the water to turn into vapor and rise into the air.

Transpiration: Water that plants give off as vapor.

Condensation: When water vapor cools, it turns into tiny drops of water. These combine to make clouds.

Precipitation: The water in the clouds falls to the earth as rain or snow.

Runoff: The water falling to the ground through precipitation runs back into the lakes, rivers and oceans over the surface of the ground.

Infiltration: When water enters the soil surface.

Percolation: What water's called after it's infiltrated into the ground and then moves through the soils.

Hydrology: The study of how water moves through the environment.

Karst: Is a landscape formed from the dissolution of soluble rocks including limestone, dolomite and gypsum. It is characterized by sinkholes, caves, and underground drainage systems. Water that enters sinkholes can move rapidly and potentially contaminate groundwater.

Impervious Surfaces: Are mainly artificial surfaces like roofs, roads, sidewalks, and parking lots that are impenetrable to water, which makes water runoff.

Did you know that the water you drink is as old as the earth itself? Dinosaurs may have swum in the water from your kitchen sink. The earth's water supply is about the same as it was millions of years ago. That's because every molecule of water is recycled over and over through the water cycle. More than 99% of the earth's water is salt water in the ocean or trapped in the ice caps or deep underground. That leaves only 1% of the earth's water available for us to use. Let's make sure we protect that water and keep it clean.

WORD SCRAMBLE

See if you can unscramble the following words. If you get stuck look at the hint for suggestions.

--	--	--	--

N P D O

--	--	--	--	--	--

T N P S A L

--	--	--	--	--	--	--	--

T L A I A C T

--	--	--	--

I R N A

--	--	--	--	--	--	--

E R G D N A

--	--	--	--	--	--	--	--	--	--

S W E A T T R W A E

--	--	--	--	--

N T P A L

--	--	--	--	--	--	--

T E L T R U

--	--	--	--	--	--

E R K E C

--	--	--	--	--	--	--	--	--	--

S T R A W E D H E

--	--	--	--	--	--	--

E R N T I C S

--	--	--	--	--	--	--	--	--	--	--

M R A W T T O S R E

--	--	--	--	--	--	--	--	--	--	--

N R U G A T W R E O D

--	--	--	--	--	--	--	--	--	--	--

A T S U E I S L B A N

Hints

Stored water on the ground surface

Things that help clean the environment

A type of wetland plant

Stormwater practice that's good for homes

Where polluted water should go

Our local watershed

Where our fresh water is located

Used for storing water

Words on the cover

Watershed

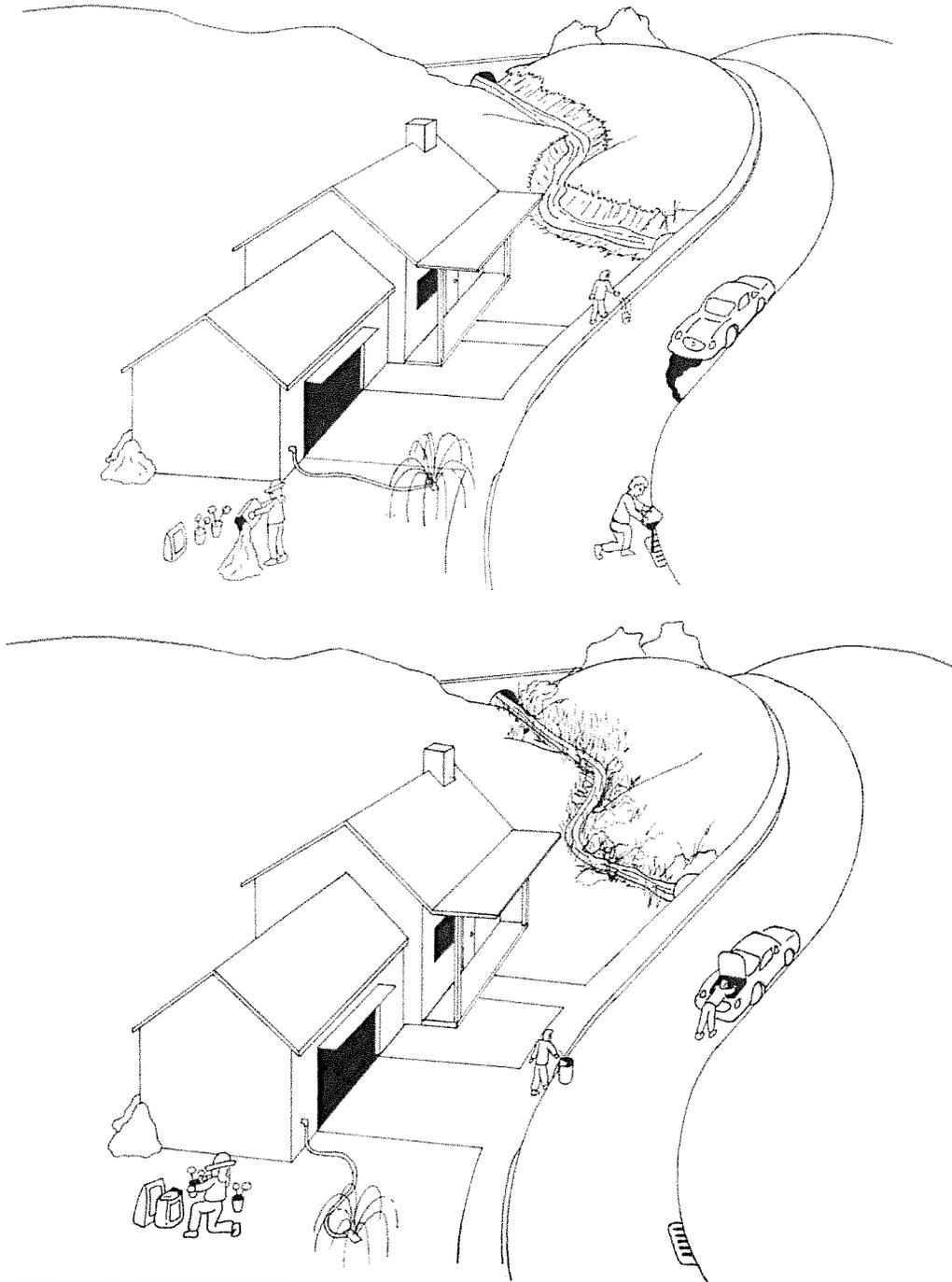
A good practice that preserves resources

Activity Challenge:

Create scrambled words you've learned about protecting our water for your friends to solve.

Stormwater Pollution Picture Search

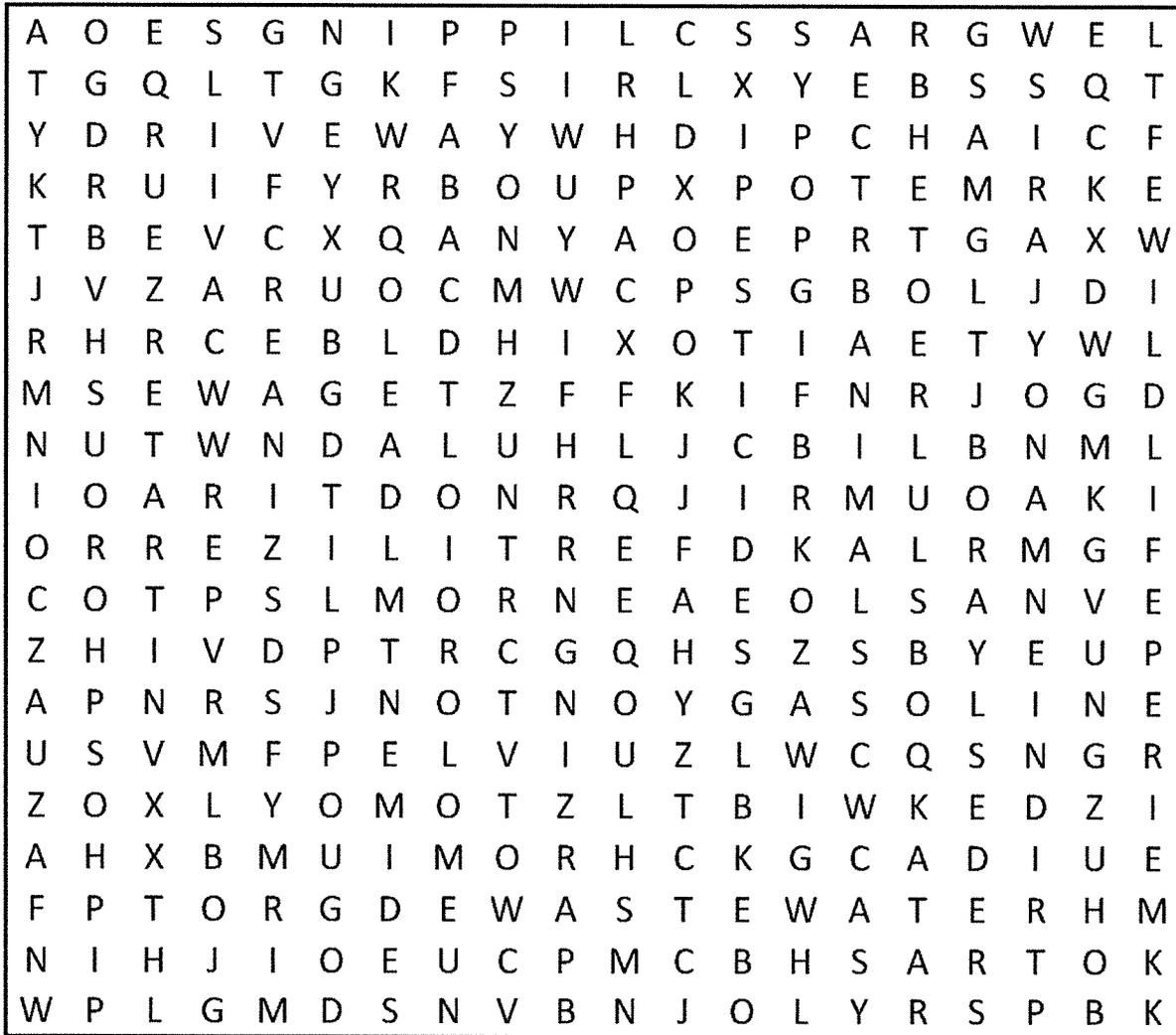
Cities and towns have more stormwater runoff than areas in the country because they have more concrete so the water can't soak into the ground. Impervious surfaces like roads and parking lots can contribute lots of pollutants to our streams. Compare the two pictures below. Circle all the differences between them that you can find that could result in polluted runoff. You should find 6 things.



Activity Challenge: What do these differences have to do with protecting our water from stormwater runoff?

Word Search

Pollution in our streams and groundwater can come from many sources (including nonpoint) and not just from big spills. See if you can find the pollutants listed below.



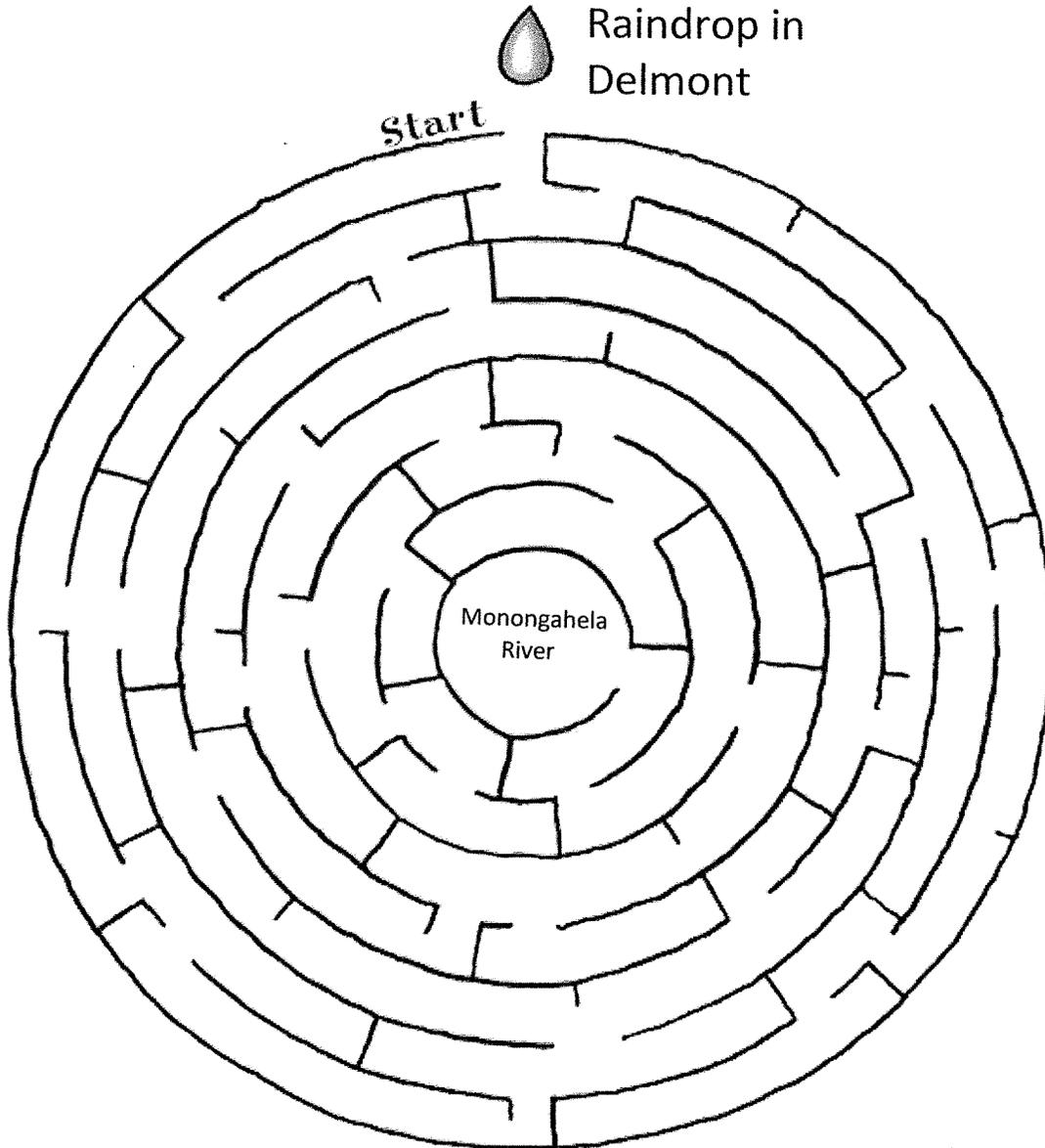
- | | | | | |
|-------------|------------|-----------------|-------------|------------|
| Agriculture | Dirt | Grass Clippings | Nitrate | Sewage |
| Animals | Driveway | Grease | Pesticides | Tar |
| Cars | Fertilizer | Lead | Phosphorous | Trash |
| Chromium | Garbage | Motor Oil | Salt | Wastewater |
| Copper | Gasoline | Mud | Sediment | Wildlife |

Polluted water that goes down the drains in your house goes to a wastewater plant or septic system for treatment.

Activity Challenge: Make your own word search with words you think are important.

Water Maze

How water moves in and around the Turtle Creek Watershed can be very complex due to Pennsylvania's geologic history. Lead the water droplet through the maze from where it landed in the upper reaches of Delmont Borough to the Monongahela River in North Versailles Township.

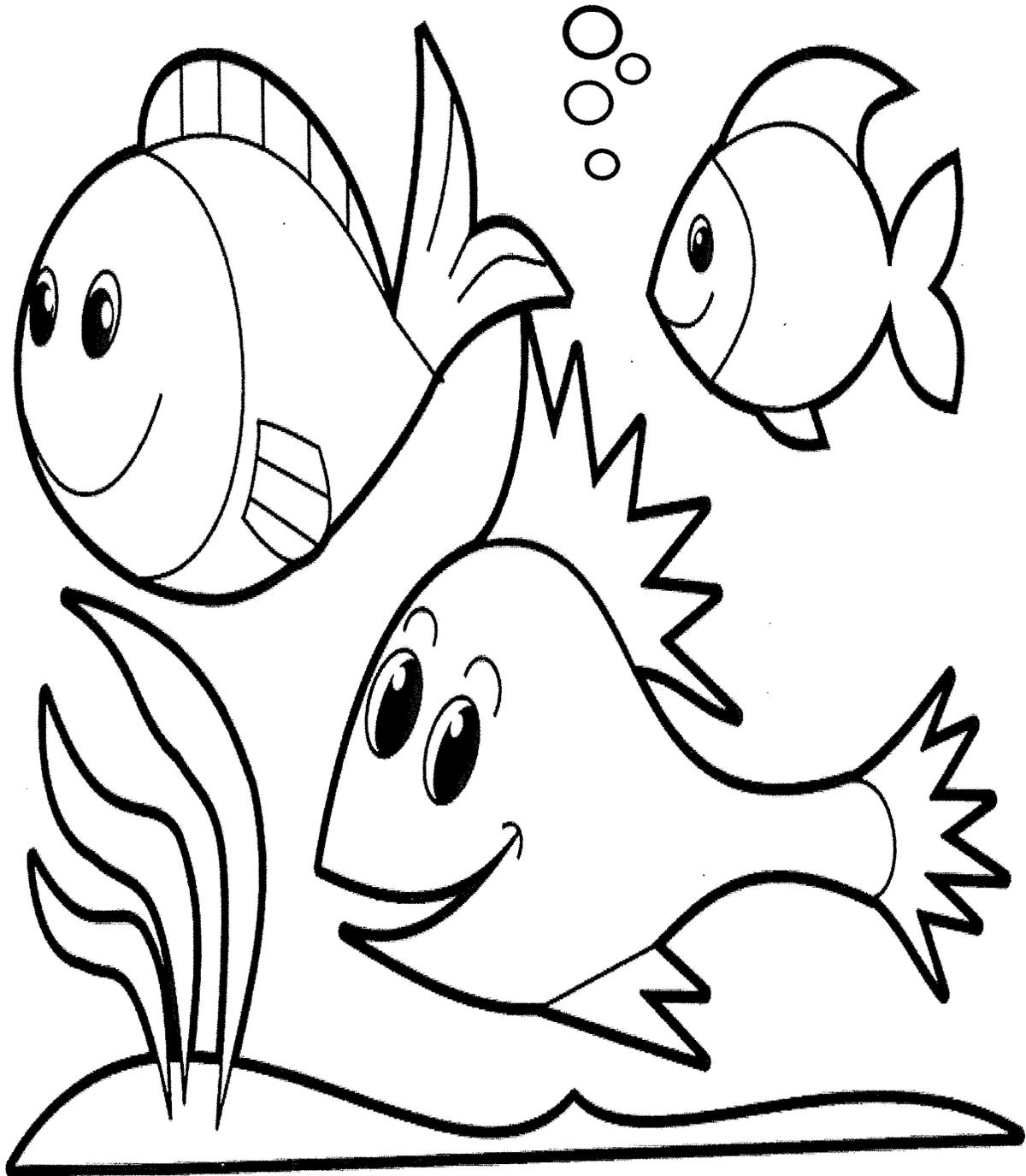


Did you know that a cistern is a tank for storing rainwater and rain barrels are a type of cistern? Many older homes and farms in the region had cisterns.

Activity Challenge: Create your own maze with multiple exits. Is there any shape that works best?

Color the Fish

Did you know that Turtle Creek is stocked with trout every spring? People love to fish in Turtle Creek along Saunder Station Road in Monroeville.



Activity Challenge: Draw your own picture of what you think is needed for a healthy watershed.

Fun Facts

In a 100-year period, a water molecule spends 98 years in the ocean, 20 months as ice, about 2 weeks in lakes and rivers, and less than a week in the atmosphere.

80% of the earth's surface is water.

97% of the earth's water is in the oceans and seas.

66% of your body is water.

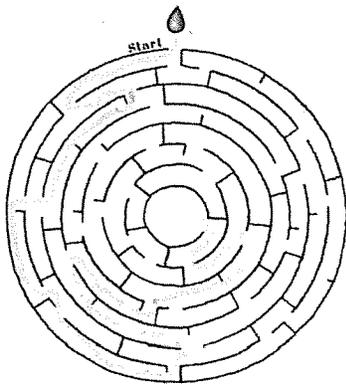
Bones are 25% water.

Human blood is 83% water.

Answer Key

Pollution Picture Search: 1) creek without vegetation, 2) car leaking fluid, 3) man dumping down a drain, 4) woman uses excess nutrients, 5) watering impervious areas like sidewalks, and 6) throwing trash on the street.

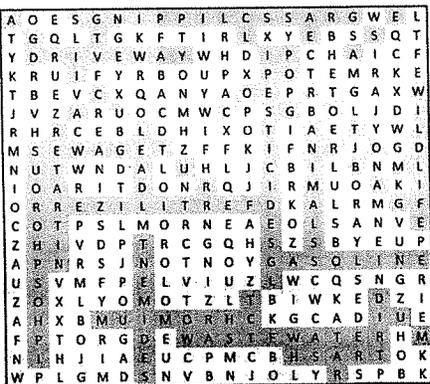
Maze:

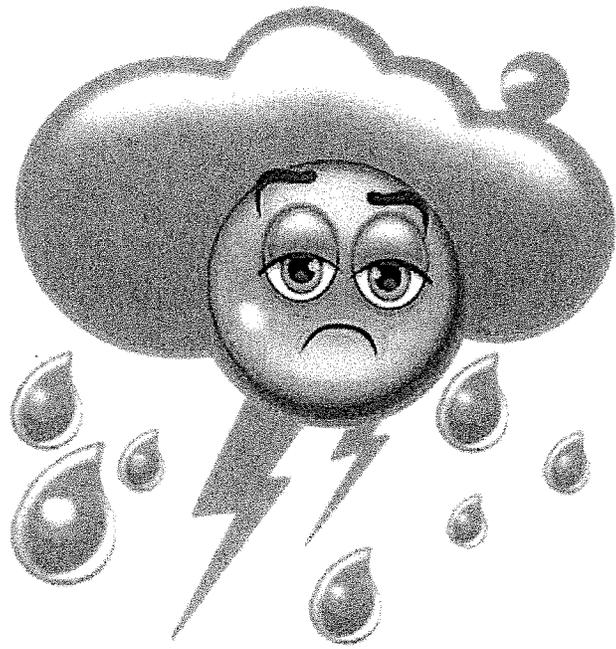


Word Scramble:

- Pond
- Plants
- Cattail
- Rain Garden
- Wastewater Plant
- Turtle Creek
- Watershed
- Cistern
- Stormwater
- Groundwater
- Sustainable

Word Search:





STORMY

The raincloud
doesn't like
getting blamed
for polluted
runoff, do your
part to keep
stormy happy.