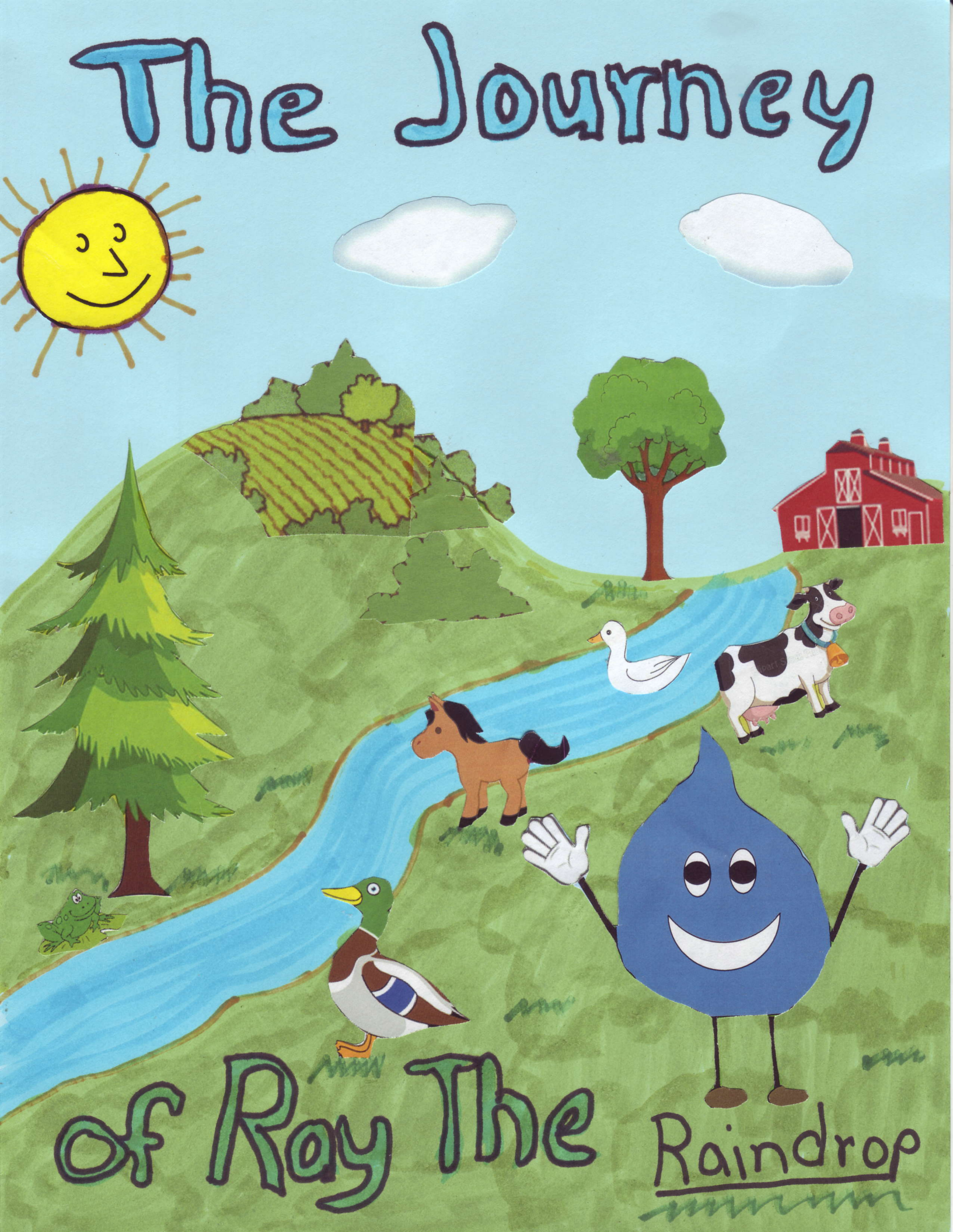
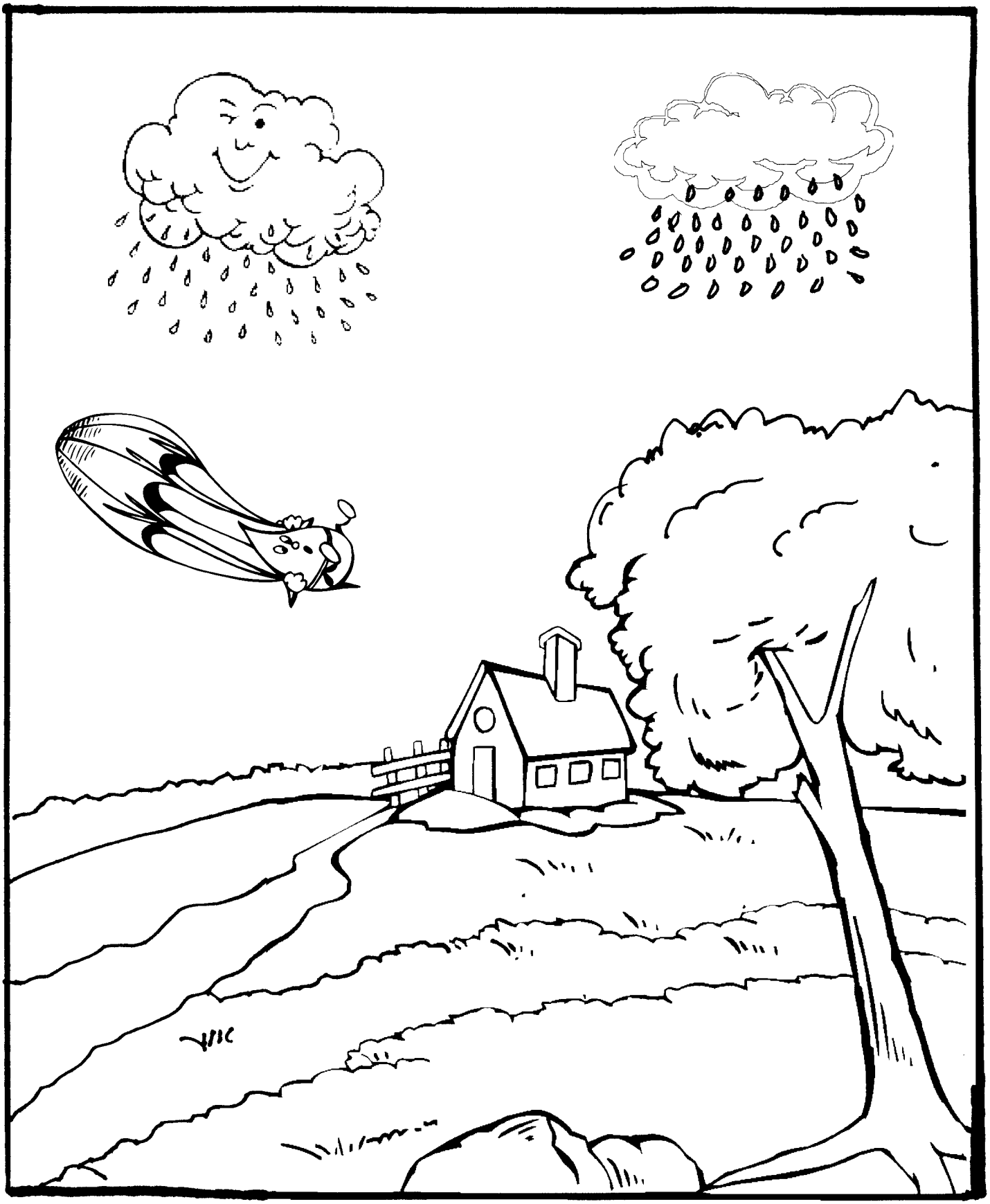
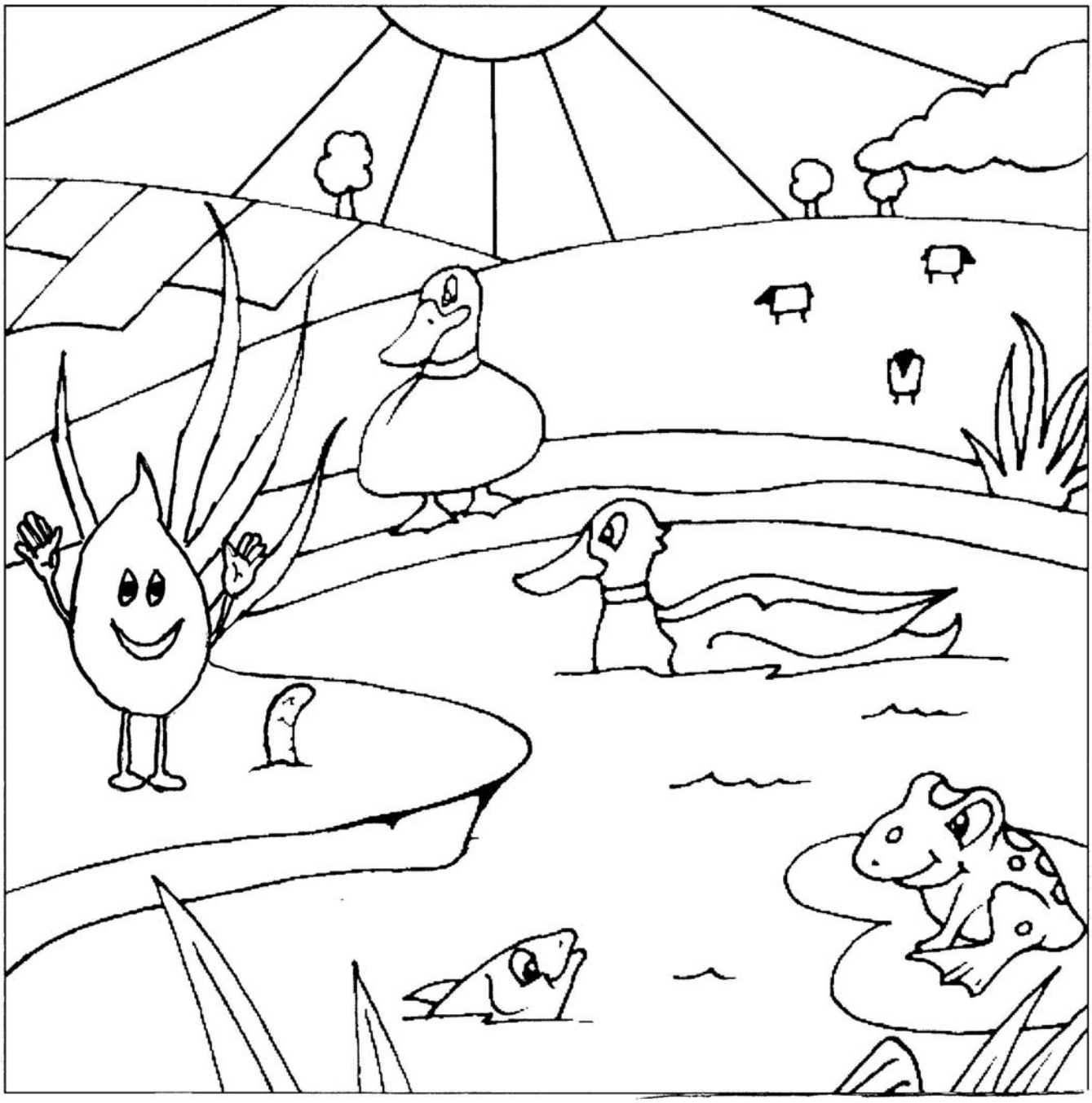
The Journey of Ray The Raindrop



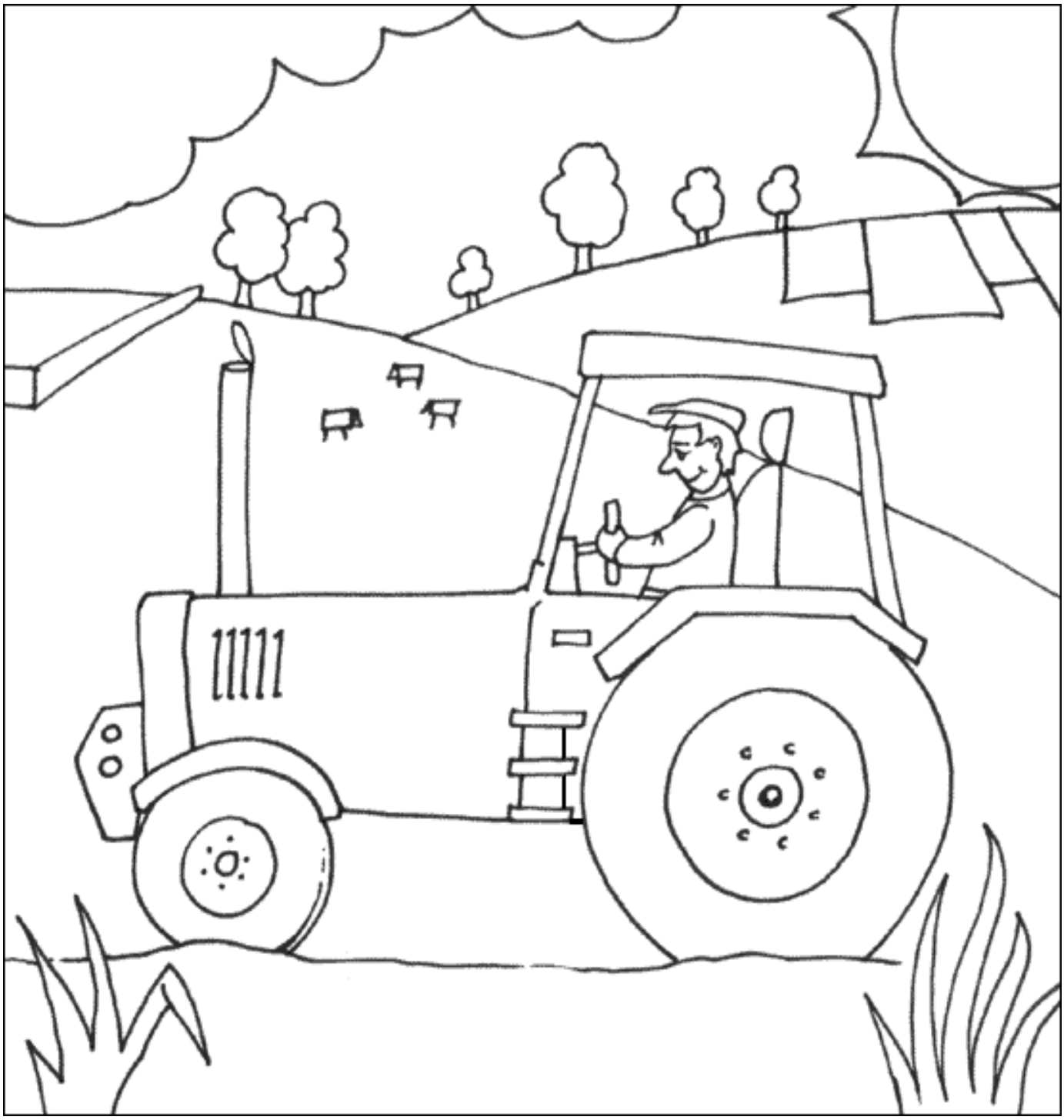
Hello! My name is Ray the raindrop and I am going to take you on a journey through my county. We will go down a country stream and visit a farm then on to the city. There we will visit our water plant and then show you ways to keep your water safe and clean. We will learn about watersheds and water cycles. So come on and take a trip with me and have fun learning.



Ray's journey began when he fell from a rain cloud onto a farm creek.

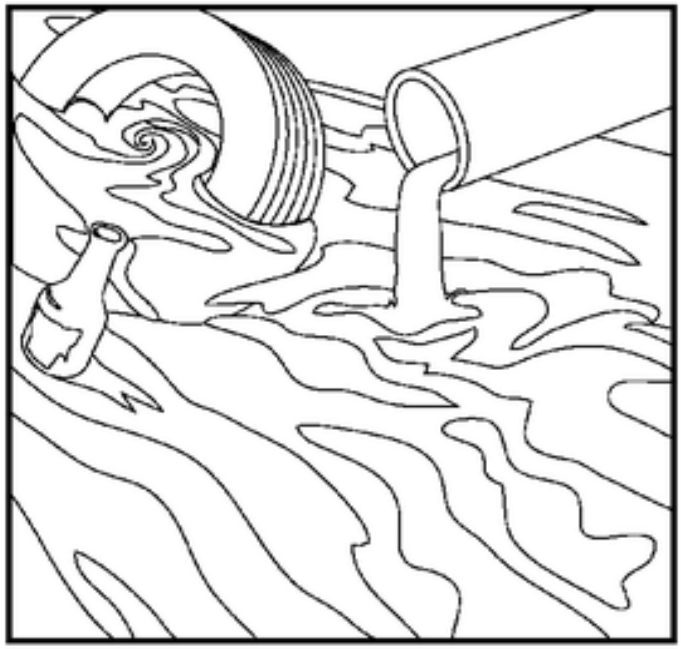


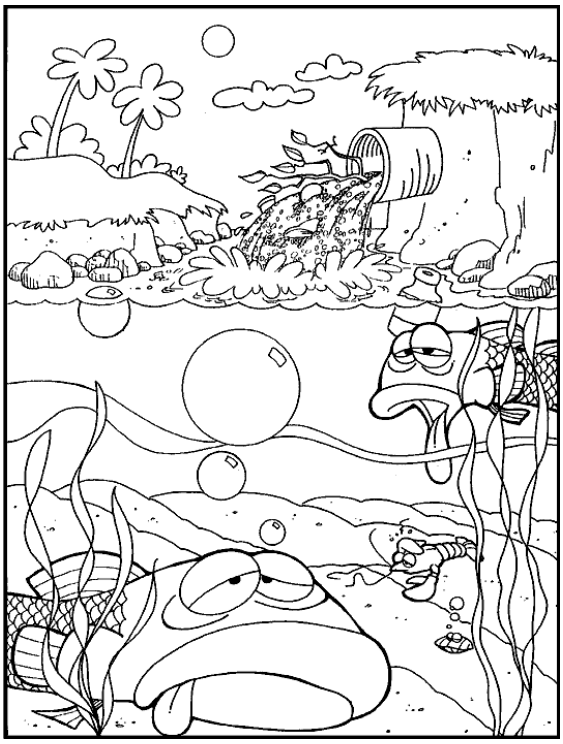
Ray went on down a stream where it went into a pond. There he saw Freddie the Frog, Fern the Fish, Mavis and Marvin the Mallards, and Willie the Worm. Ray also noticed cattle on the hillside and knew there was a farm nearby.



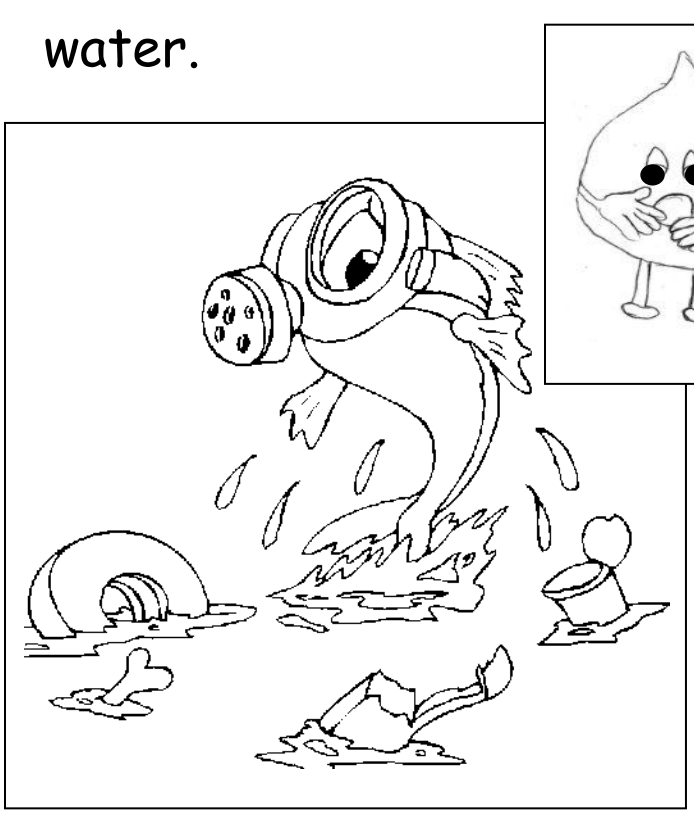
Then he went back into a stream where he saw Mr. Green plowing in his fields. Ray noticed that Mr. Green had nice buffers next to the stream so that no sediment could get into the water.

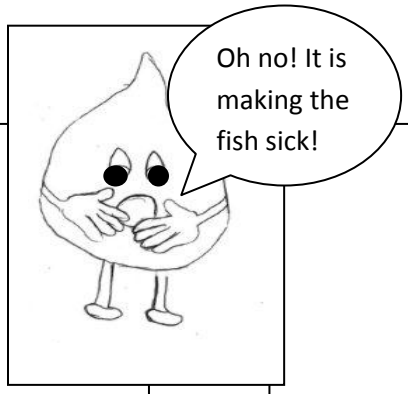
Further on down the stream Ray saw that kids were enjoying the stream in many different ways.

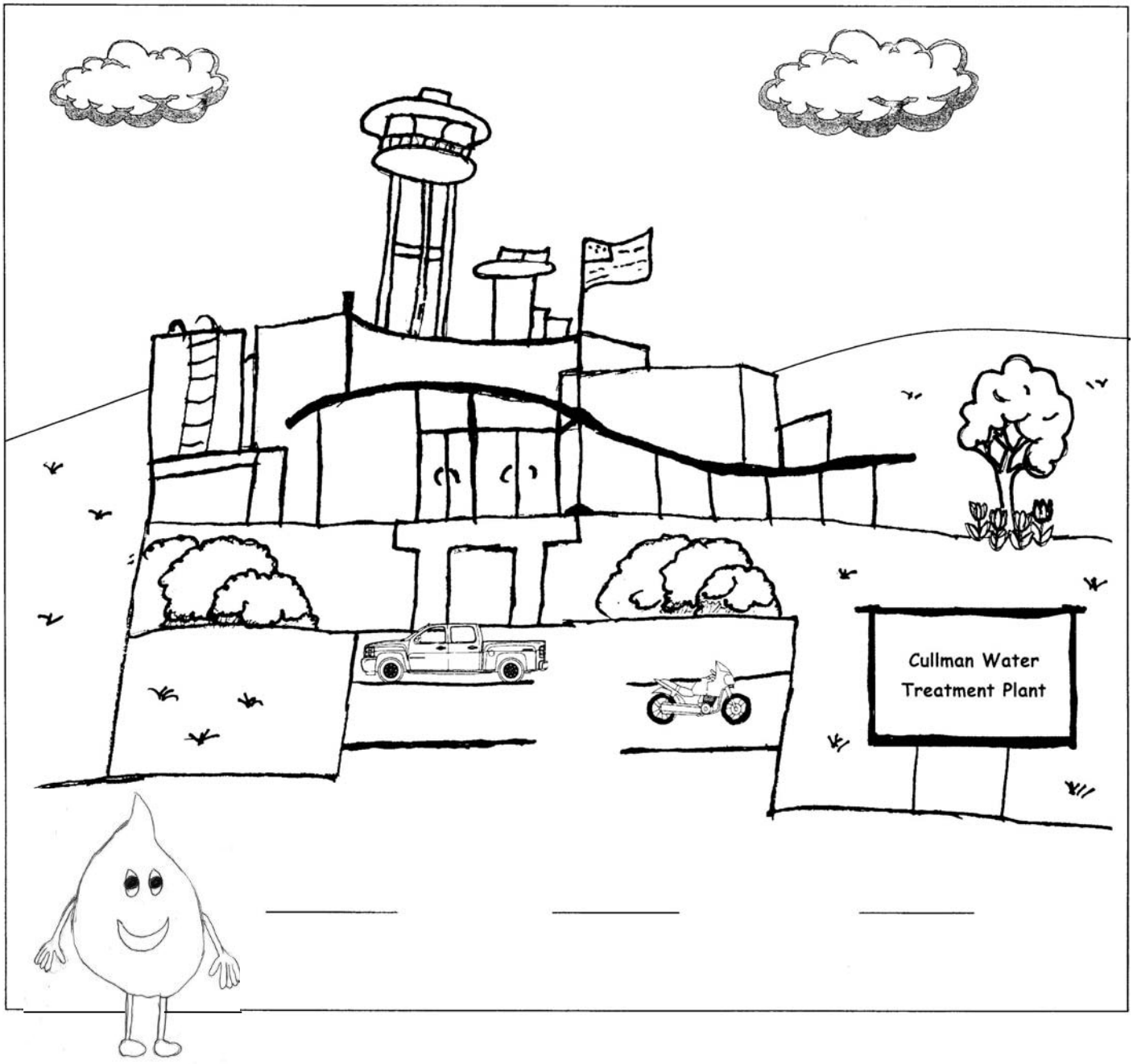




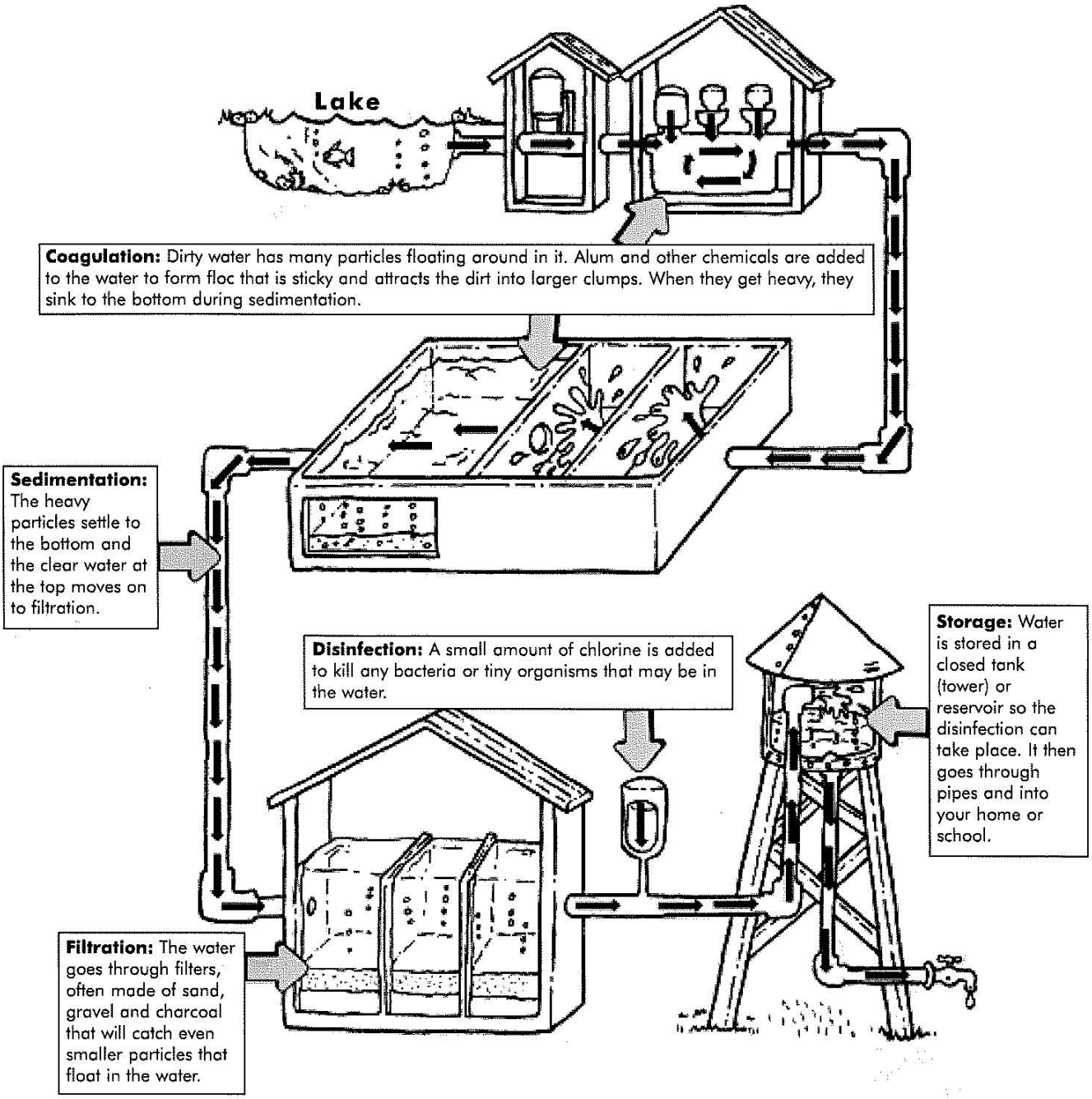
In many big cities they have point source pollution. That is pollution where you can see where it is coming from. One way you can help is to recycle! You should never throw trash on the ground because it can pollute your water.



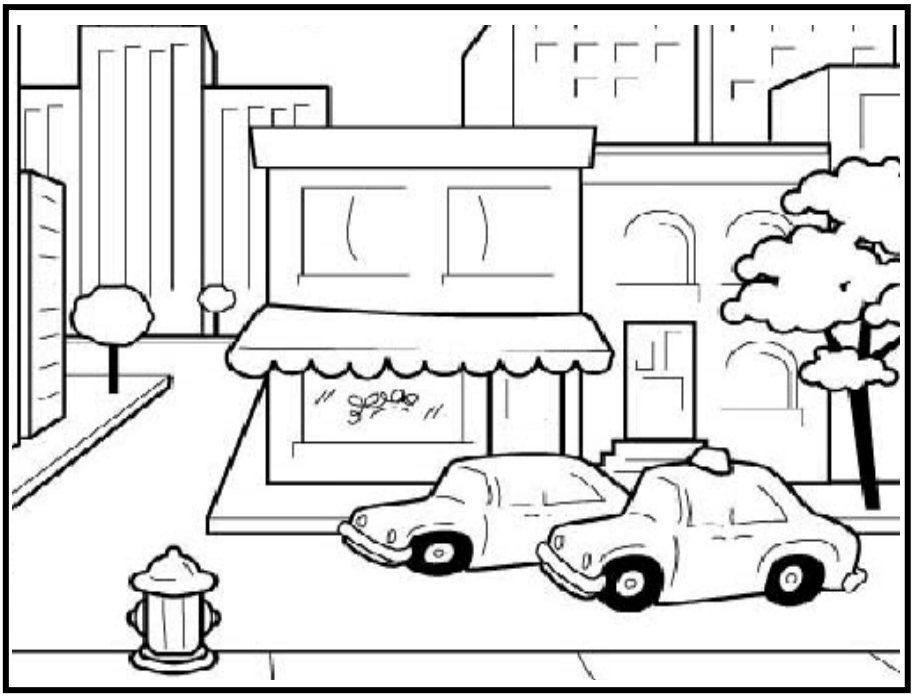


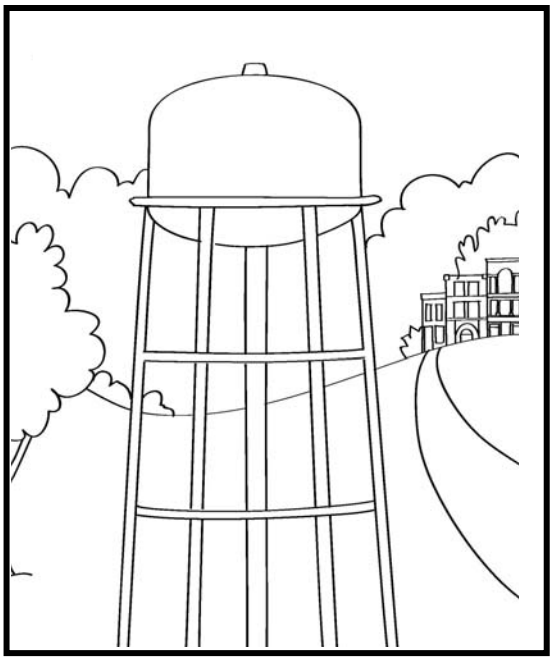


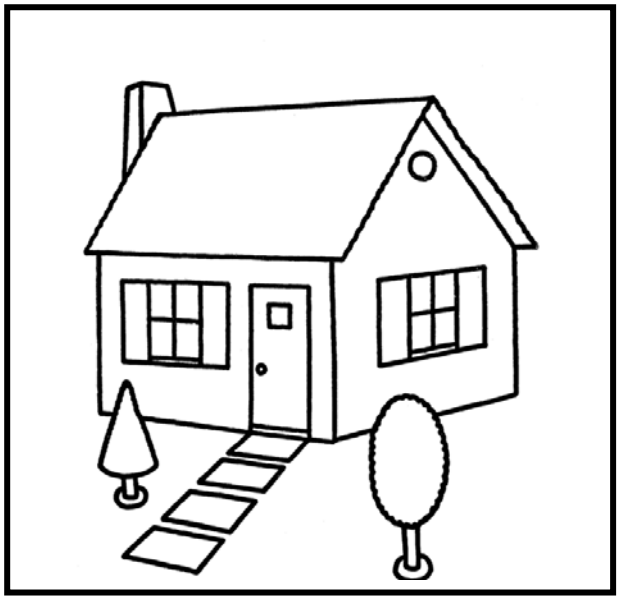
Further on down the stream Ray saw the water treatment plant. This is where all the water is treated before going into big pipes that will take it to the different storage tanks in the county and around town.



Water is cleaned at a treatment plant then sent to our homes through pipes. The cleaned water is stored in the storage tanks around the city and county. This picture shows the process of how the water is cleaned.



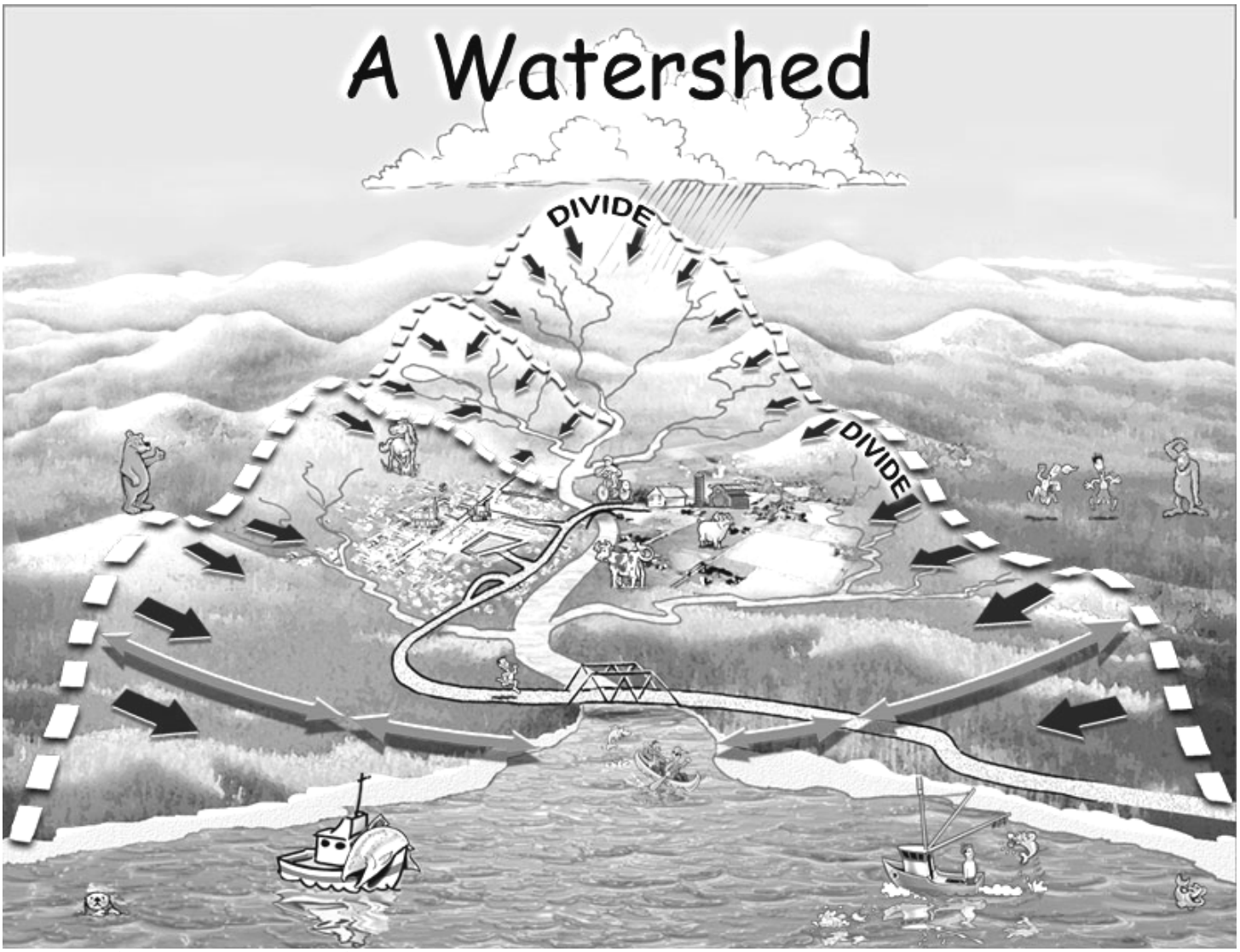


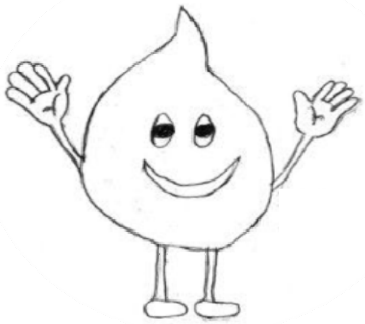


Then Ray went past a town where he saw many buildings, homes and a water tower.

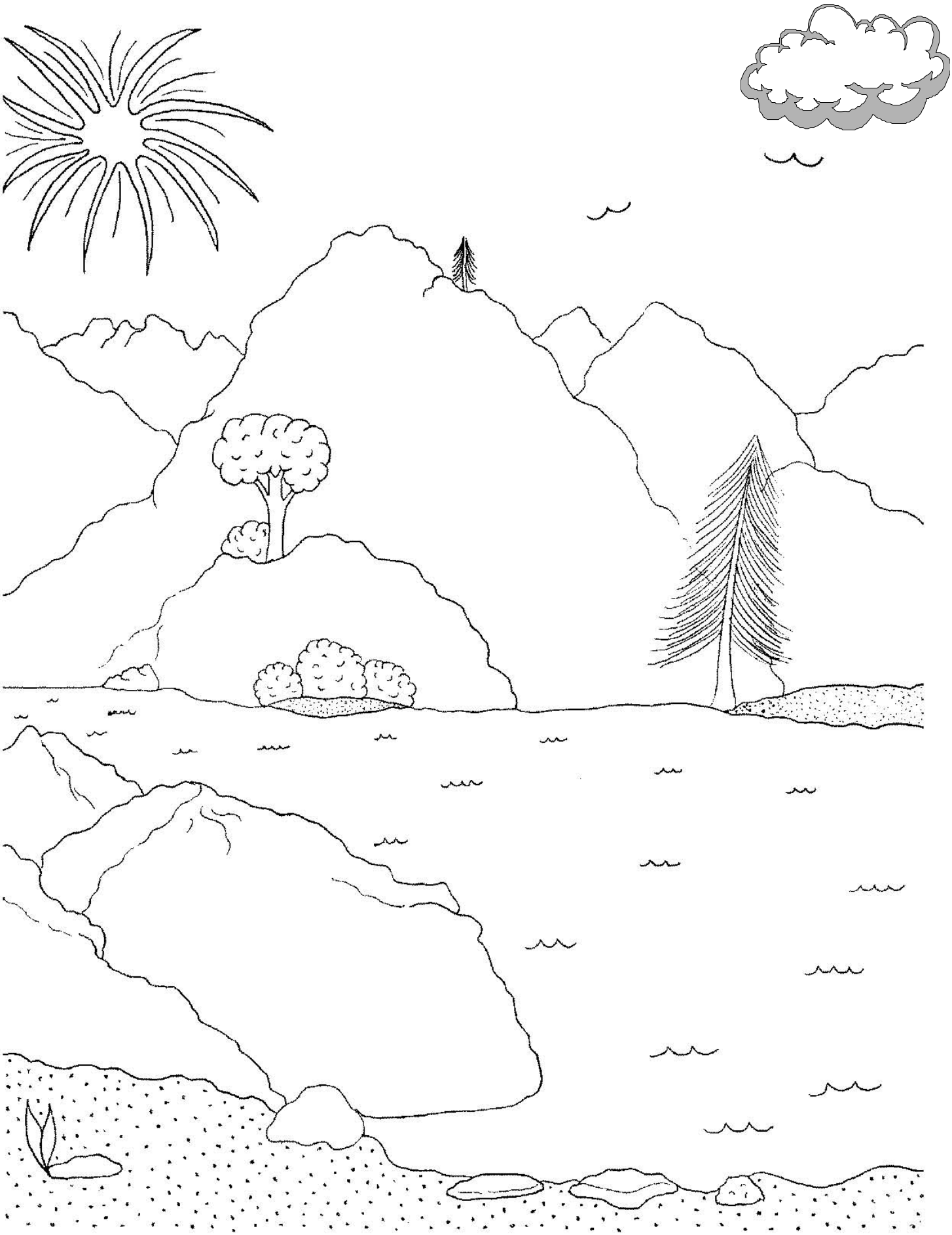
A water tower is where water is stored after being treated at the water treatment plant. The water from your faucet is coming from a water tower in your community.

A Watershed

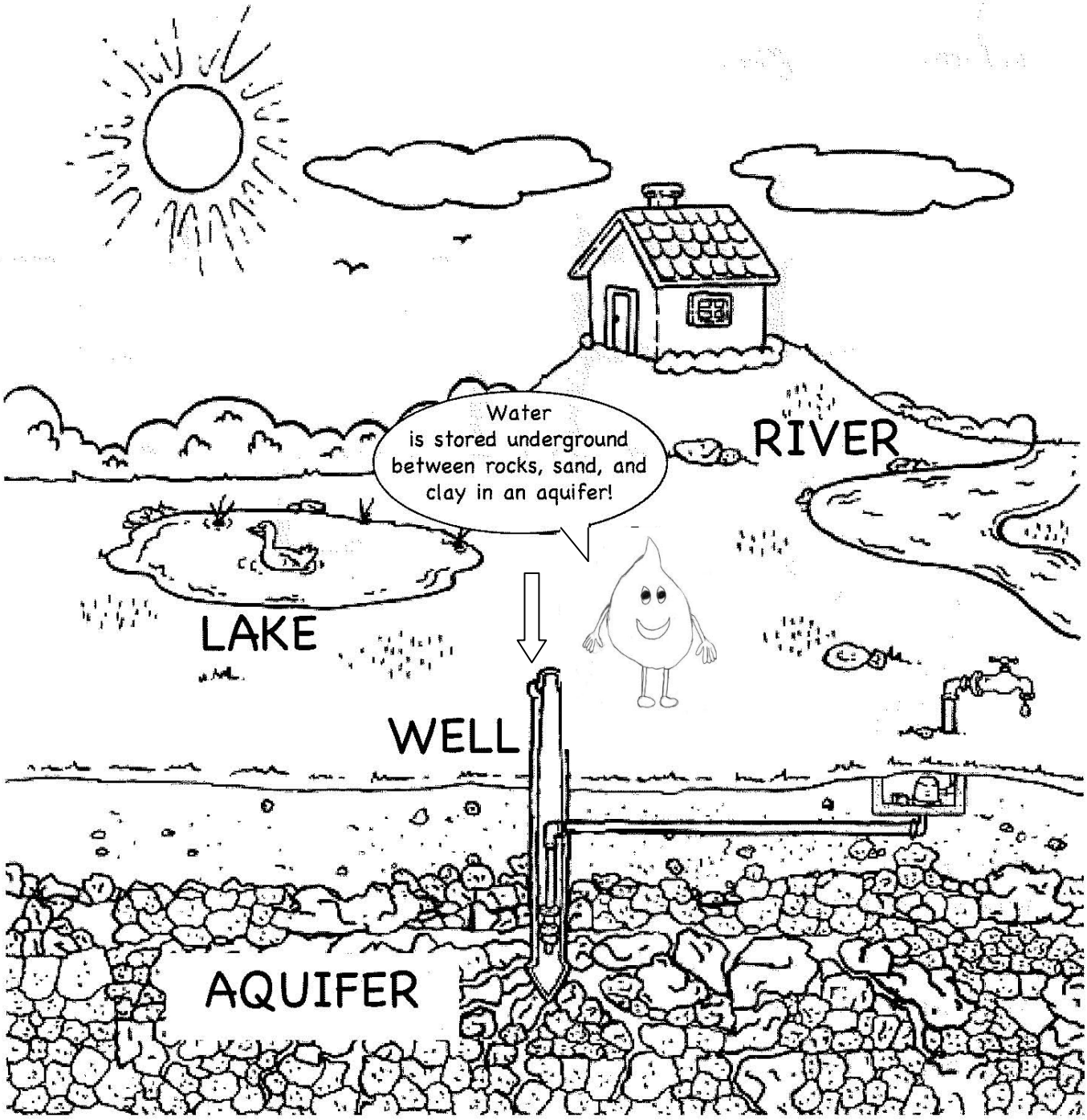




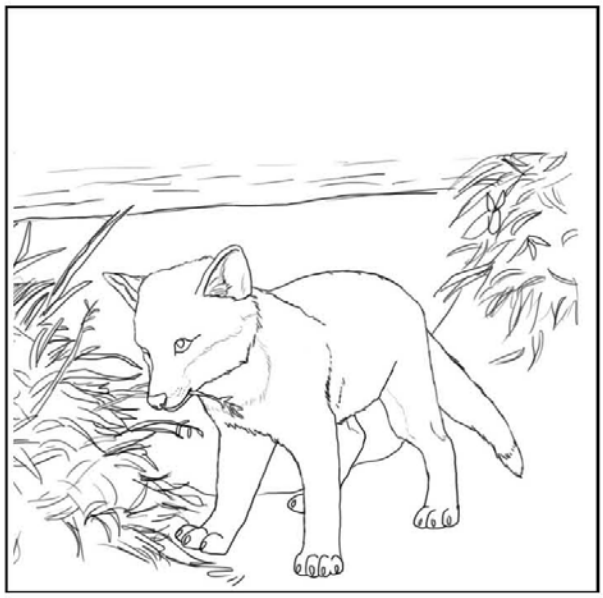
Everyone lives in a watershed, and we are a part of a watershed community. The animals, birds and fish are, too! The quantity and quality of water draining from a watershed are dependent upon the climate, vegetation, soils, geology, and development of that watershed.

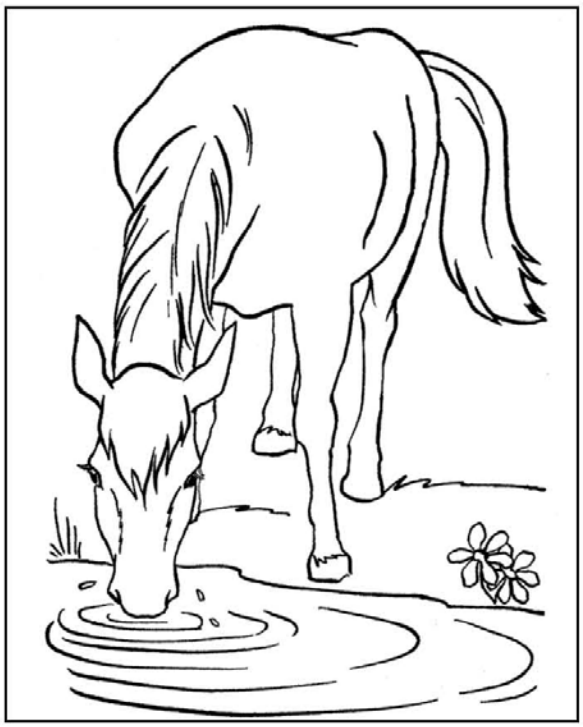


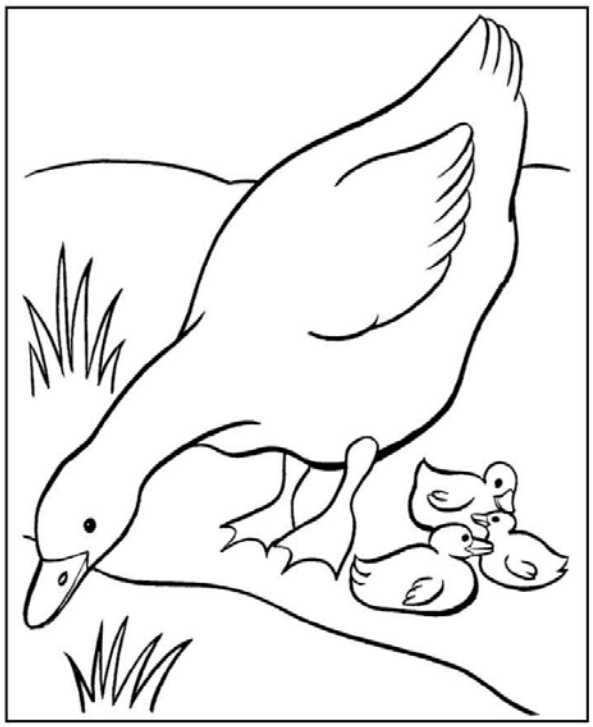
Color this watershed landscape.



Drinking water comes from lakes, rivers, streams, or under the ground. (ground water)







It is important to keep our streams and lakes clean. Because our animal friends need water too just like we do. Look on the next page and see if you can find and circle all the words listed below the puzzle.

T Q M M E K J I B N T C H N I

O N K A A B J Z T B B L F O R

W C E Y D A Y X B J C I Z I S

B E I M T B D C Y N C M E T Q

H R N F N Q I S O E X A E U A

V E C O L O G Y L M H T C L H

C A Z M Z N R C Q A P E L L T

O M V O E O Y I B N P O N O R

P E R E K C T I V R V Q S P A

O C R D E A T N W N C P W T E

C G X R Y A Q K G K E C Y F Y

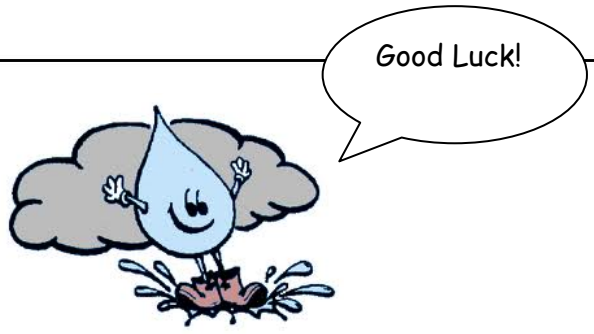
E R N V T J V Y Z W U B B U Y

D M U N O I T A V R E S N O C

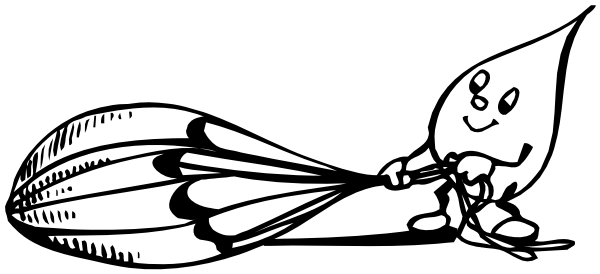
C J Z Y X Y G R E N E B U Q V

Y O G L V X P B S A V Y A Z I

CLIMATE
COMPOST
CONSERVATION
DAY
EARTH
ECOLOGY
ENERGY
ENVIRONMENT
GREEN
HABITAT
OZONE
POLLUTION
RECYCLE



Ray's Water Cycle Activity

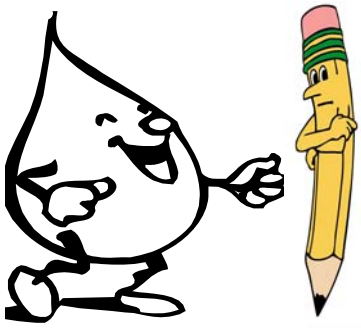


You will need:

1. jar
2. plants
3. bottle cap or shell of water
4. soil
5. sand
6. small rocks

Directions:

1. Fill jar as in the picture and put the lid on.
2. Put the jar in a sunny place and see how the water cycle works.



Word Scramble

Put the letters in the right order to complete the sentence!

All living things need _____ to live.
t a w e r

When water evaporates, it travels into the air and becomes part of a _____.
d l o c u

Less than 1% of all the water on the earth is _____ water.
s e f r h

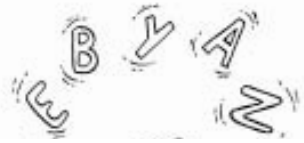
We _____ water in the liquid form.
i k r d n

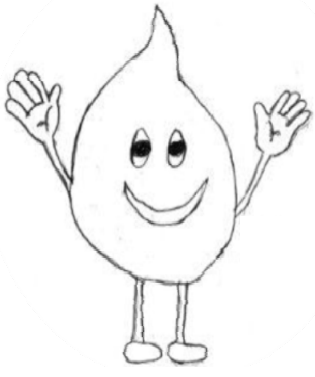
Check for leaks and save hundreds of _____ of water a day.
a l l o g n s

You'll save water by taking a quick _____.
h o w s e r

Wash bikes and cars with a _____ and sponge instead of a running hose.
k e c b u t

Ask your _____ to look for ways to save water.
m f a i y l





The Hydrologic Cycle

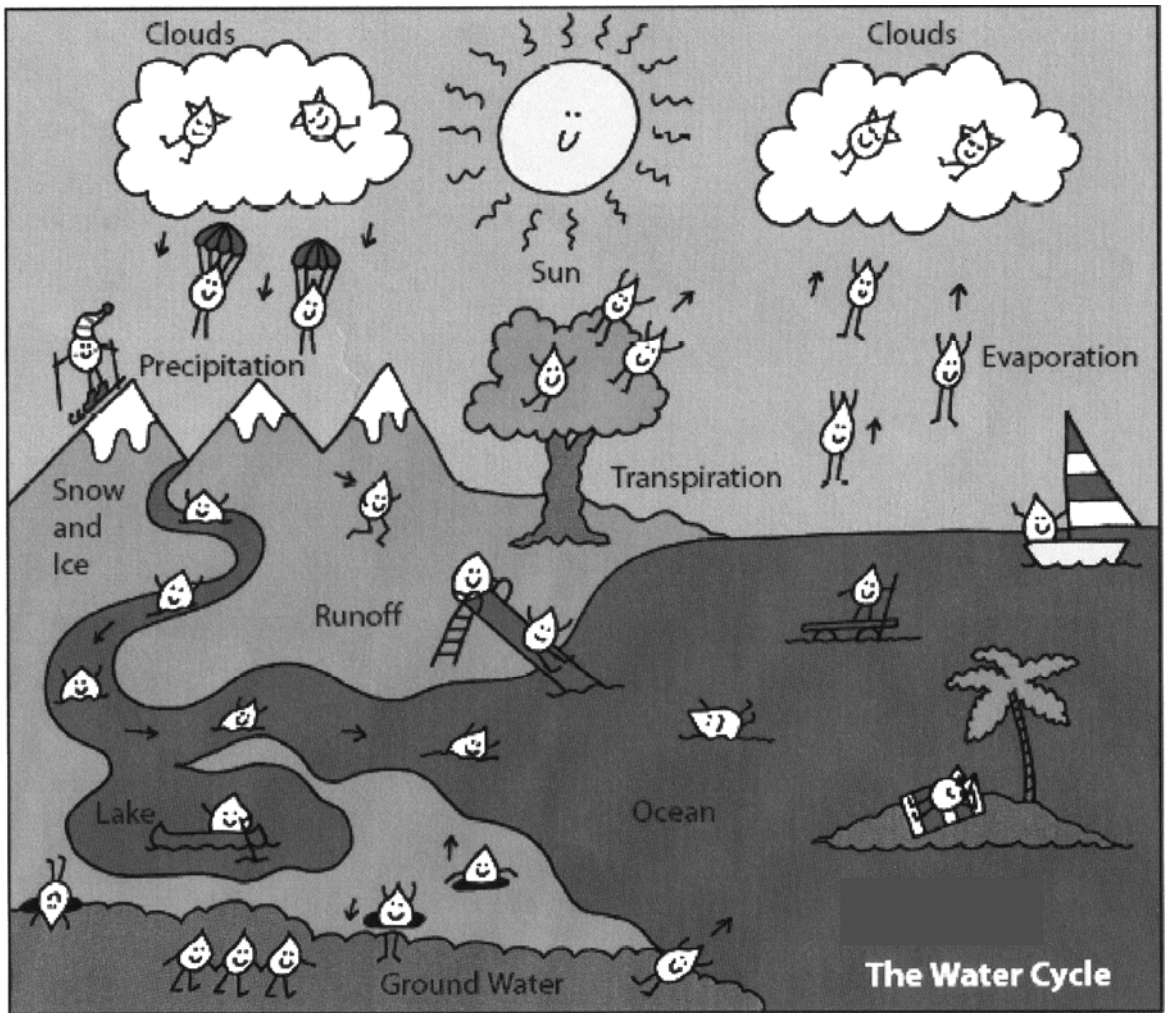
From the time the earth was formed, water has been endlessly circulating. This circulation is known as the hydrologic cycle, or water cycle. Groundwater is part of this continuous cycle as water evaporates, forms clouds, and returns to earth as precipitation.

The Process

Surface water is evaporated from the earth by the energy of the sun. The water vapor forms clouds in the sky. Depending on the temperature and weather conditions, the water vapor condenses and falls to the earth as different types of precipitation. Some precipitation runs from high areas to low areas on the earth's surface. This is known as surface runoff. Other precipitation seeps into the ground and is stored as groundwater.

Defining Groundwater

Think of groundwater as water that fills the spaces between rocks and soil particles underground, in much the same way as water fills a sponge. Groundwater begins as precipitation and soaks into the ground where it is stored in underground geological water systems called aquifers. Sometimes groundwater feeds springs, lakes, and other surface waters, or is drawn out of the ground by humans through wells. The water then can evaporate, form clouds, and return to the earth to begin the cycle over again.

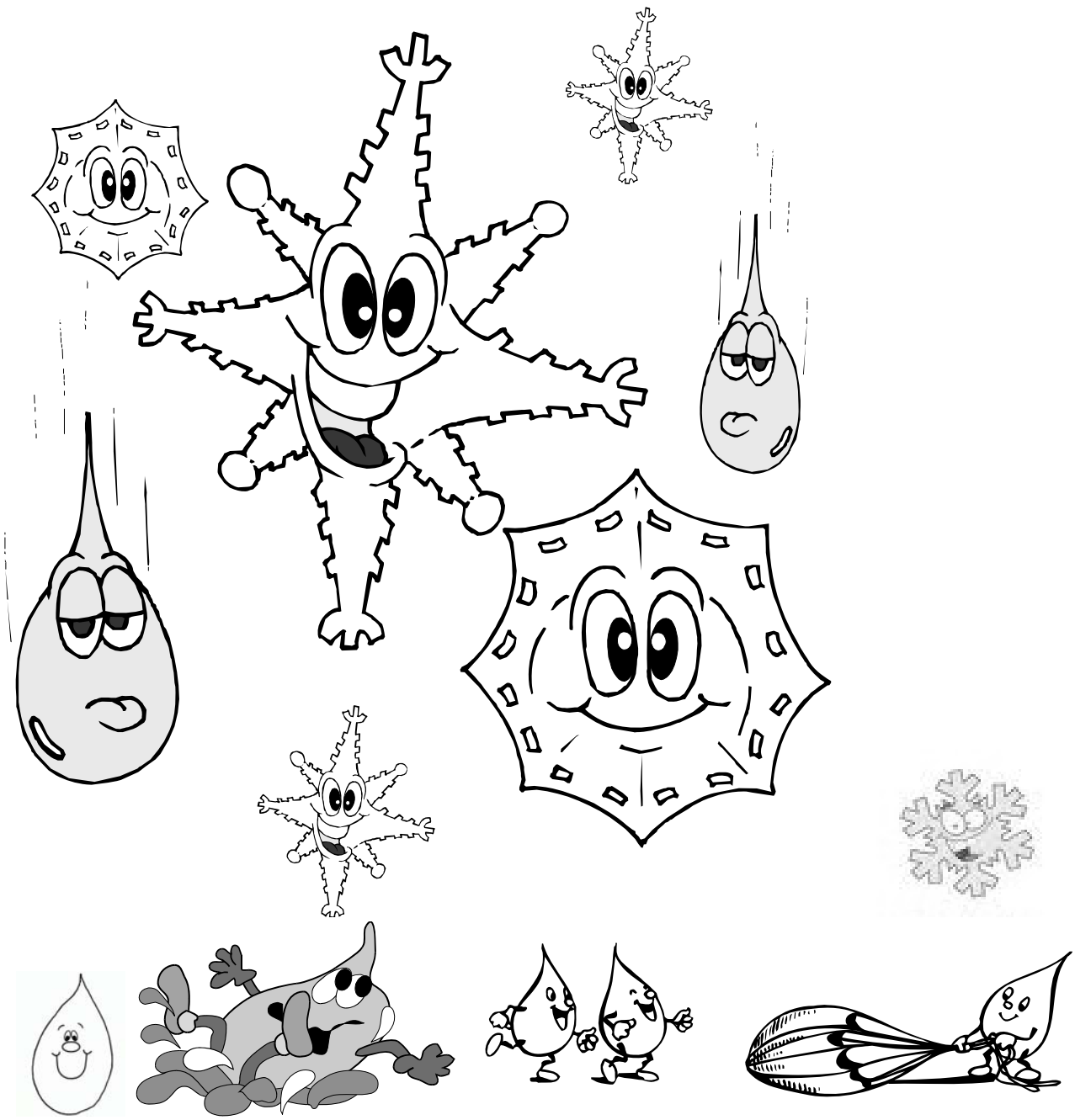


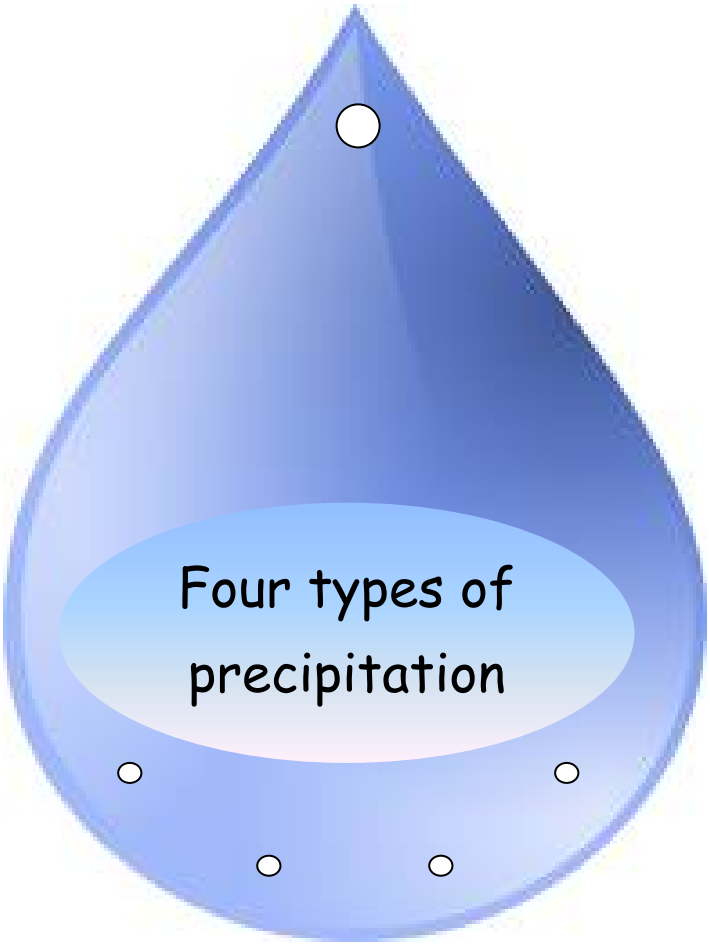
Precipitation color page

Precipitation comes in four shapes:

Rain, Hail, Sleet, and Snow.

Can you find the different shapes?





Supplies needed:

Cardstock or construction paper

Glue

String

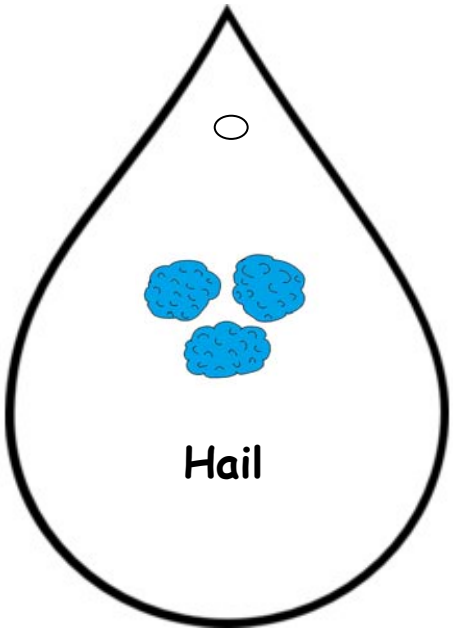
Scissors

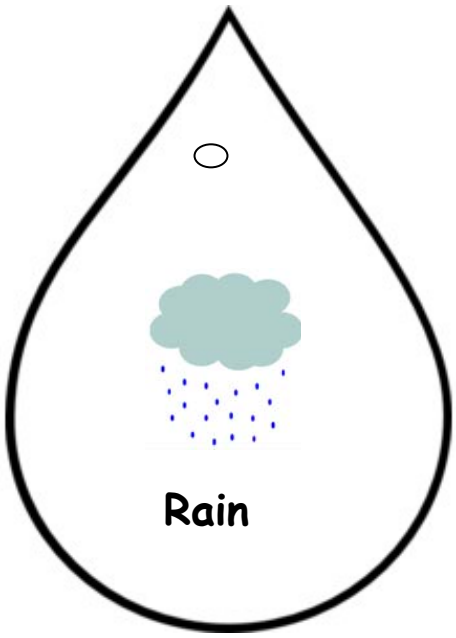
Hole punch

Instructions

Make two copies on card stock or construction paper. Cut out and clue same raindrop back to back. Punch a hole where indicated and insert string into each small raindrop then attach to the big blue raindrop (in holes indicated). Attach the completed big blue raindrop to the center hole of the blue cloud. (last page)


Sleet


Hail


Rain

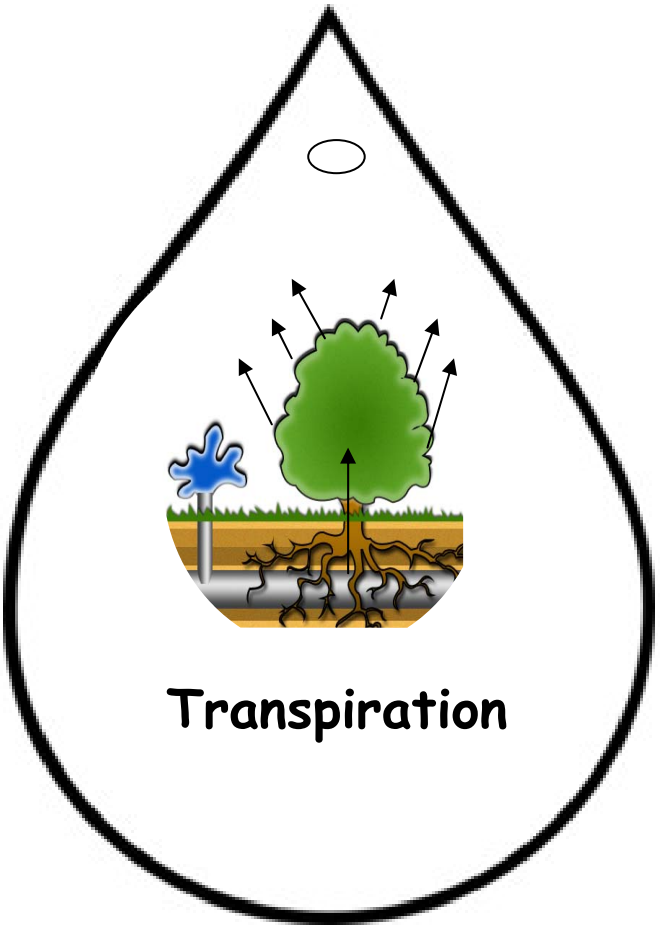

Snow

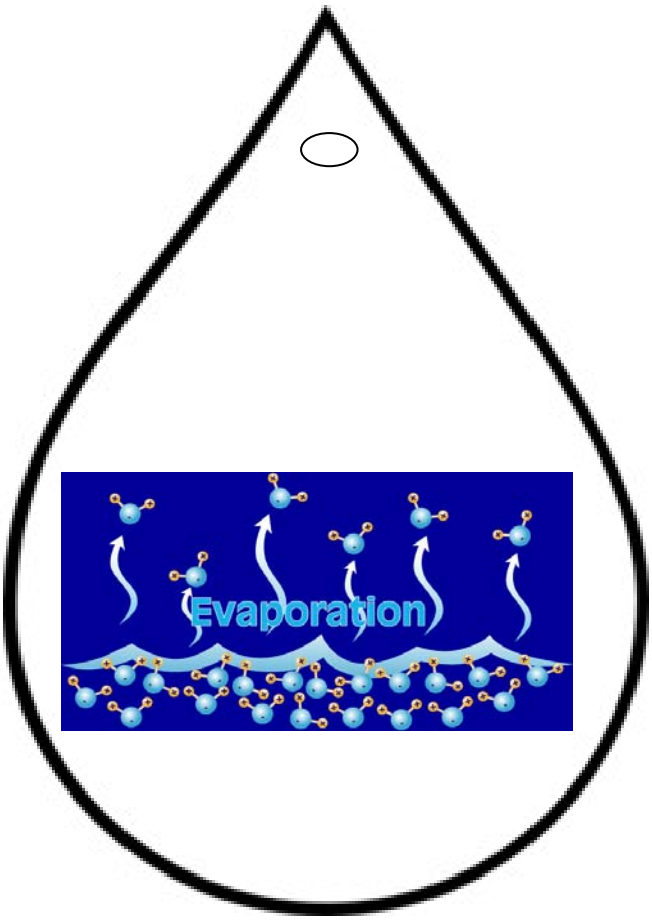
Instructions for the following pages

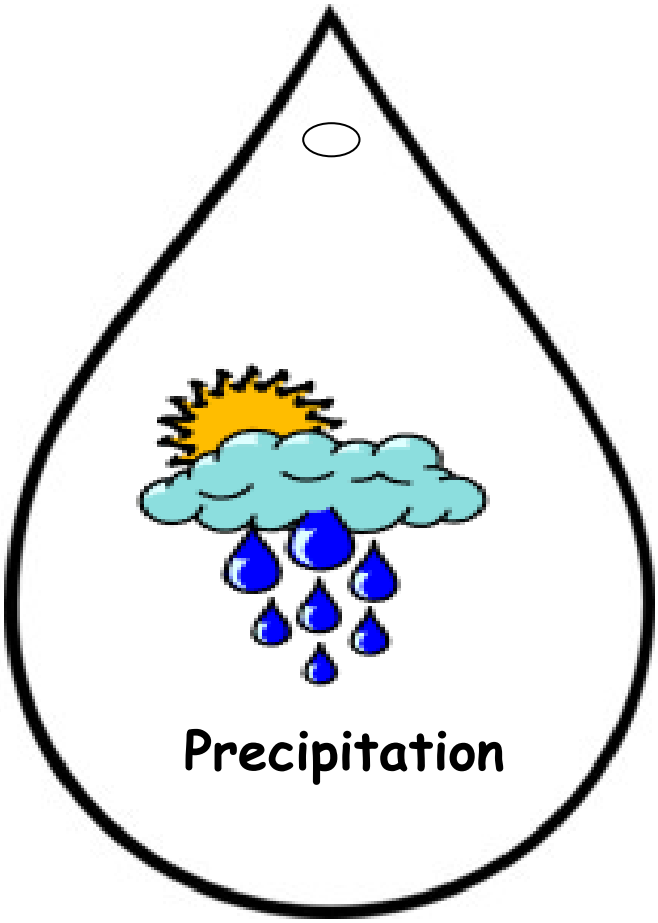
Make 2 copies of the water cycle raindrops on card stock or construction paper and cut out.

Glue same raindrop back to back and punch holes in top where indicated and attach string.

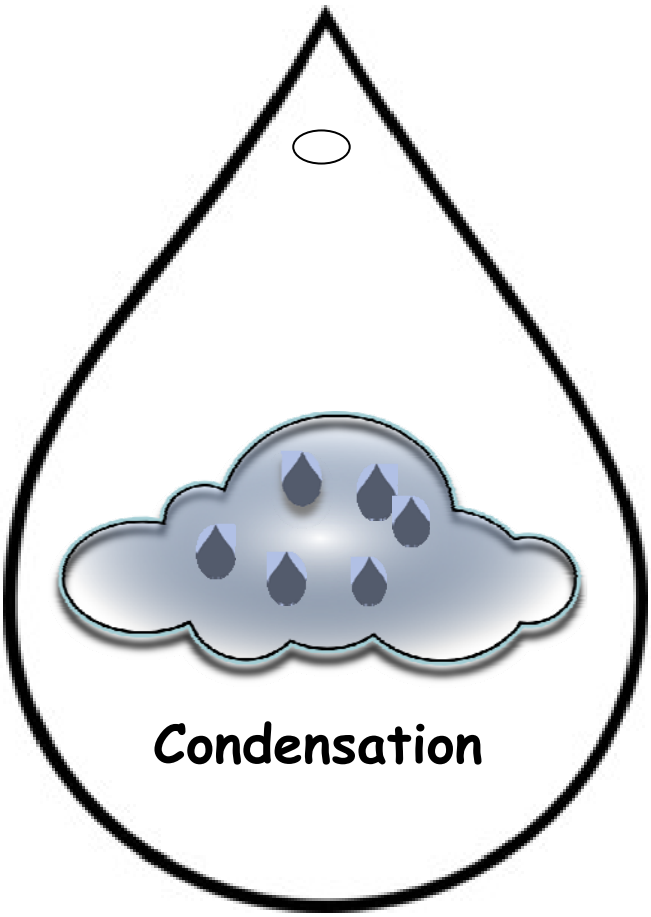
Make 2 copies of the big blue cloud (last page) on cardstock or construction paper, cut out and glue together back to back. Punch holes where indicated and attach string to top.



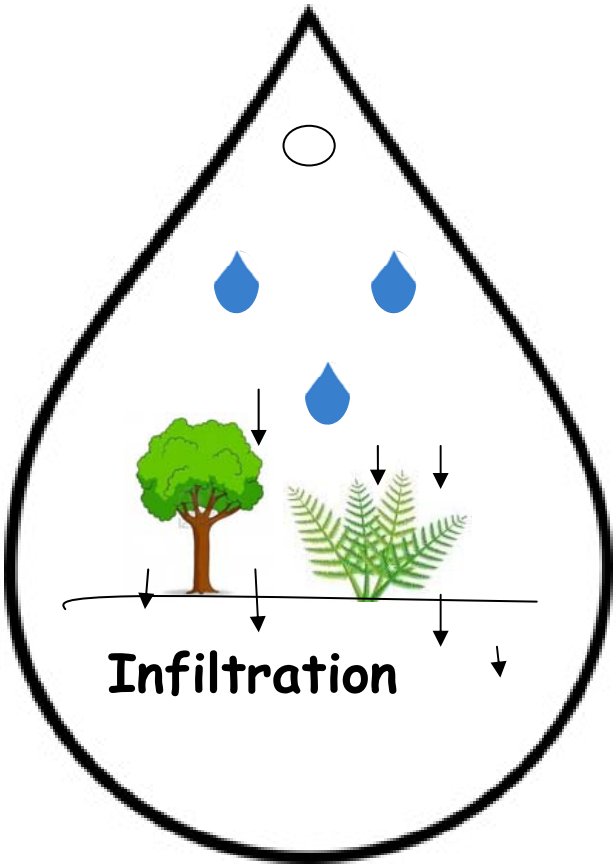




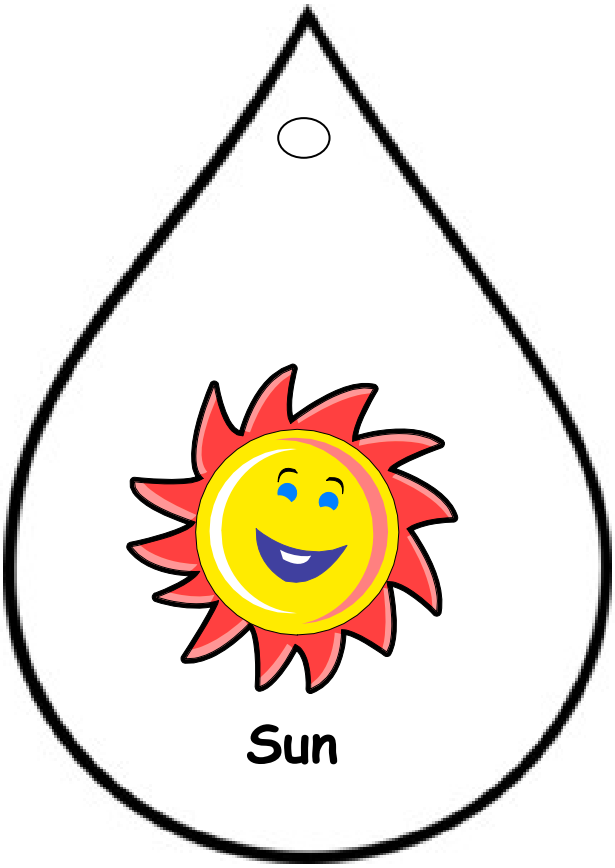
Precipitation



Condensation



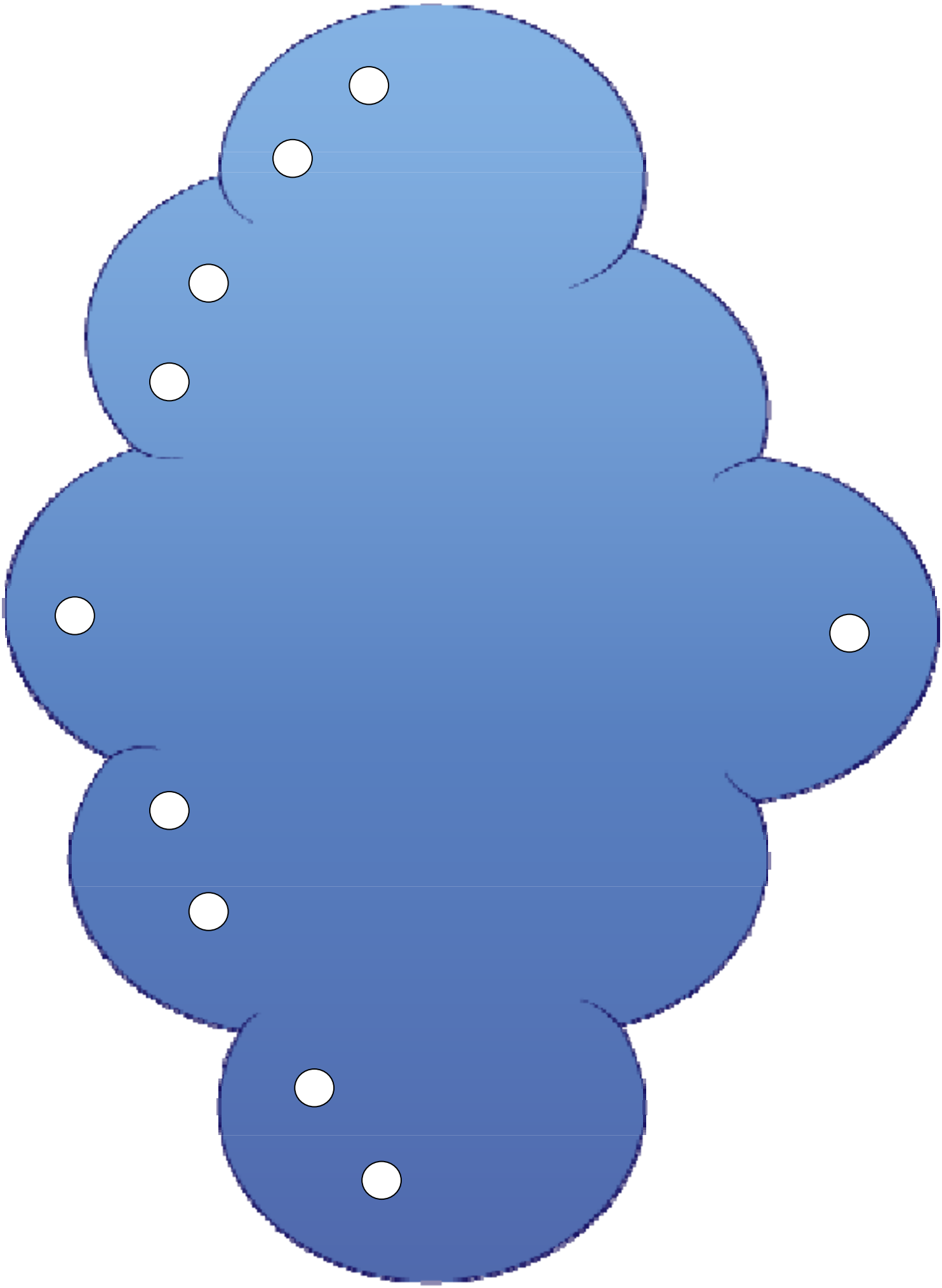
Infiltration



Sun

Rainbow

Planet Earth



Precipitation happens when water falls to the earth. Whether or not it hits the earth as a raindrop, snow crystal, piece of hail or snow depends on the temperature, season, and location. When the humidity is low the air is very dry and the rain will not reach the ground. It will evaporate on the way down.

Infiltration happens when water fills the pore spaces between individual soil particles. It is kind of like when dirt becomes mud. Not all water gets infiltrated; some runs off across the land surface (called runoff) or falls into a body of water. Some also seeps into the ground and becomes groundwater, which is where some of you may receive your drinking water. Think of groundwater as water that fills the spaces between rocks and soil particles underground, in much the same way as water fills a sponge. Groundwater begins as precipitation and soaks into the ground where it is stored in underground geological water systems called aquifers. Sometimes groundwater feeds springs, lakes, and other surface waters or is drawn out of the ground by humans (via wells).

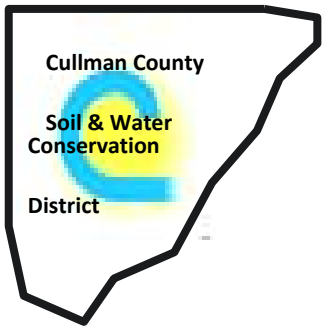
Transpiration is a process that happens when water is infiltrated into the soil; the water is sucked up by plants and used to keep the plants alive. It's like their roots drink it up. Once they've used all the water they need, they give it off through their leaves as water vapor or gas.

Evaporation: If the water that goes through the soil is not sucked up by a plant, it will move slowly through rock underground until it reaches the surface again in the form of a "seep", spring, or artesian well (water from an aquifer that rises above the ground). Once it reaches a surface body of water again like a lake or ocean storage, the sun heats it up and it evaporates. The sun makes water evaporate from building, land, people, and bodies of water. When it evaporates, it leaves behind minerals like salts (such as you find in oceans), but this is a natural process - fish and plants in the ocean are made to survive in the salt water.

Condensation: When the water gets up high in the earth's atmosphere, it condenses together to form clouds. Condensation occurs when water vapor rises until it reaches cold air. It then changes to a liquid, condenses and attaches to particles (dust, smoke, smog, etc) to form drops. The drops join to form clouds. As the drops get bigger, the clouds get darker. A cloud turns dark because light hits the cloud and is absorbed making the cloud dark.


Infiltration
Rainbow
Transpiratior
Condensation
Planet Earth
Precipitation
Sun
Four types of precipitation
Hail
Rain
Sleet
Snow

This book was designed by Deborah Widner, District Administrative Coordinator CDA, for the Cullman County Soil and Water Conservation District.



For more information on water facts contact the Cullman County Soil and Water Conservation District at: 256-734-1431

501-B 4th Street SW
Cullman Alabama 35055
Email - debw@hiwaay.net