

HIGH ABOVE THE
BITTERROOT
MOUNTAINS

Hi! I'm Drippy the Water Drop.
I'm taking a rest after my long trip
from the ground to high in the sky.





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Brrrr! I'm getting really cold up here.
It feels like it's time
for me to transform
into snow.



As I fall down
from the sky,
I become
PRECIPITATION.
Look at my
beautiful arms!

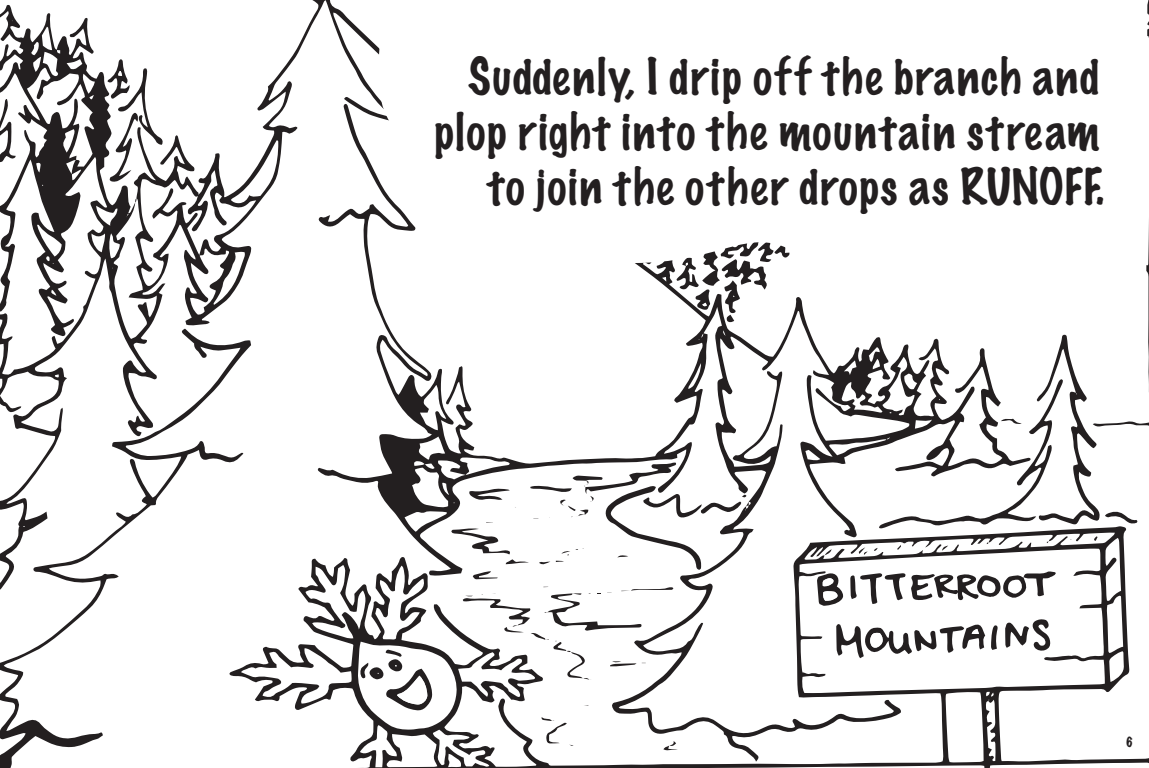


I'm on my way to join
my fellow snowflakes
that cover the mountains.



But before I even
reach the ground, I was
caught on a tree branch.
Whoa! I'm melting!

Suddenly, I drip off the branch and
plop right into the mountain stream
to join the other drops as **RUNOFF**.



I am cruising fast down
this stream, joining the
SURFACE WATER
in the **WATERSHED.** →

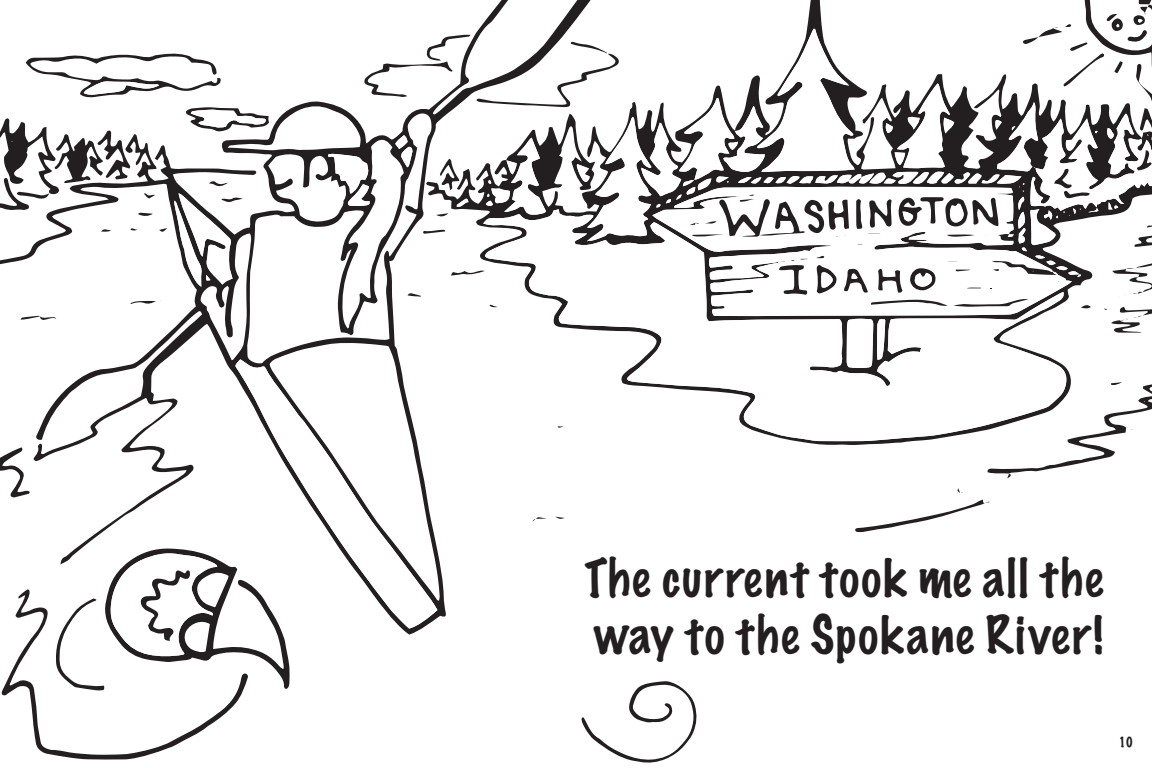




**Whoa! It didn't take long for me
to reach Coeur d'Alene Lake from
the mountain stream.**



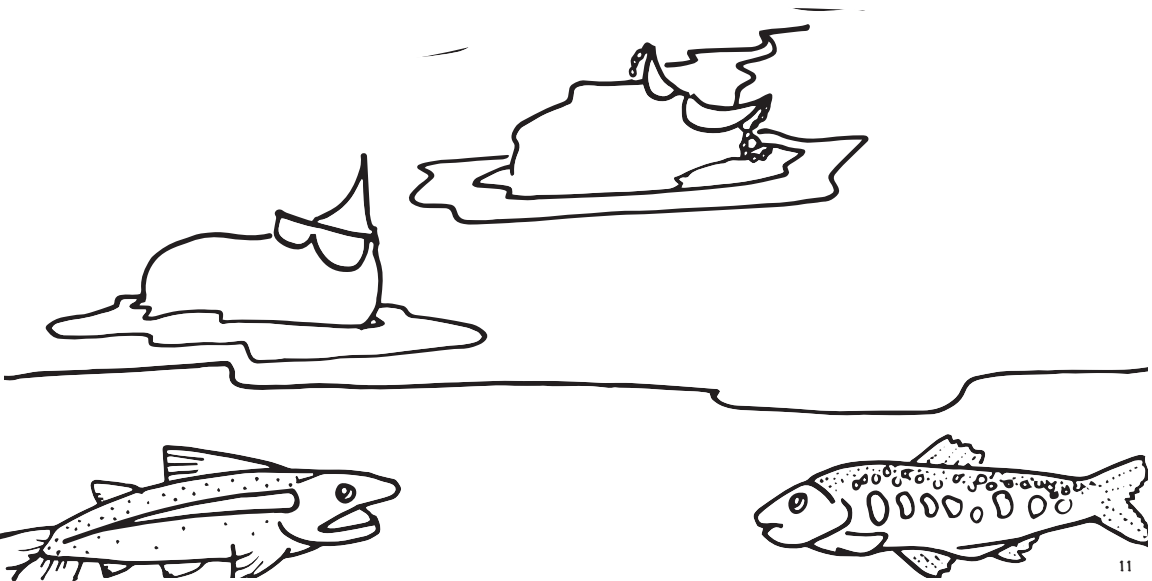
Time for a break! I'm going to rest while the **CURRENT** takes me across the lake.

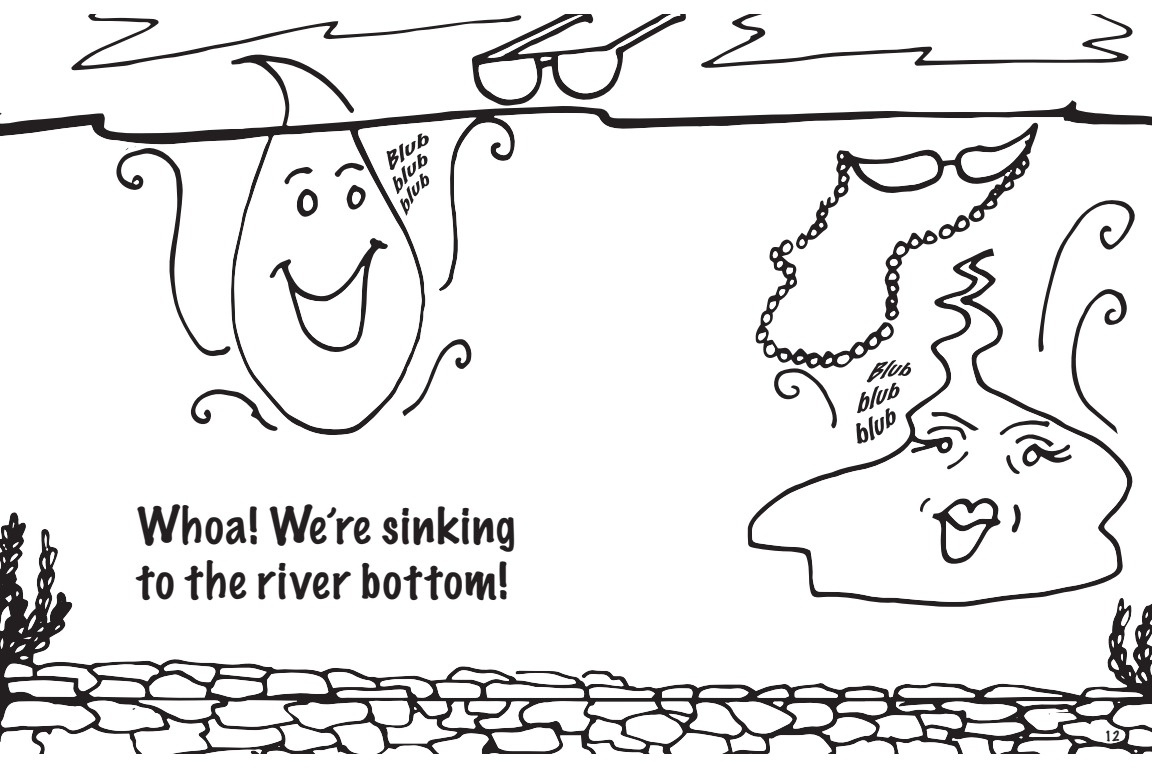


The current took me all the way to the Spokane River!

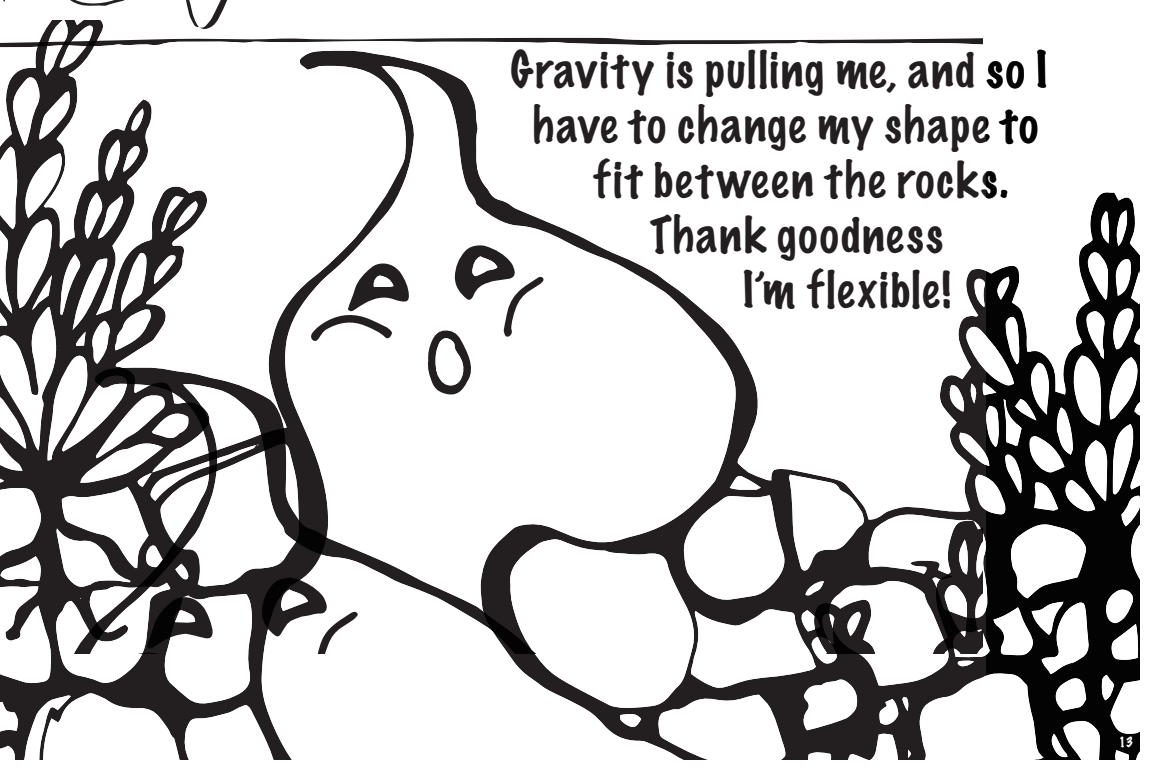


Hey! I found some friends that just came from the Spokane Valley Rathdrum Prairie Aquifer.





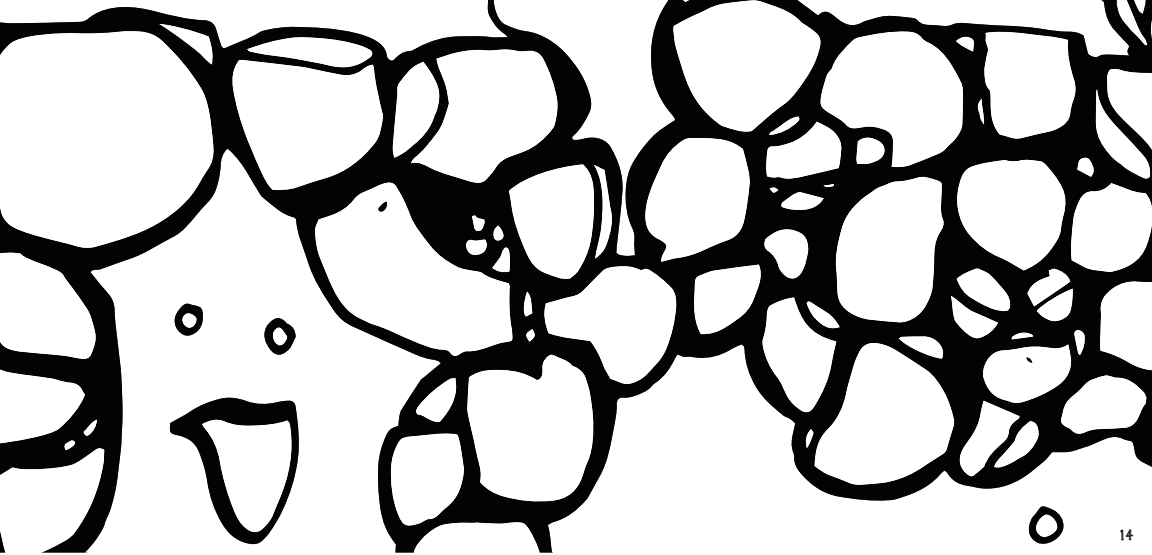
Whoa! We're sinking
to the river bottom!

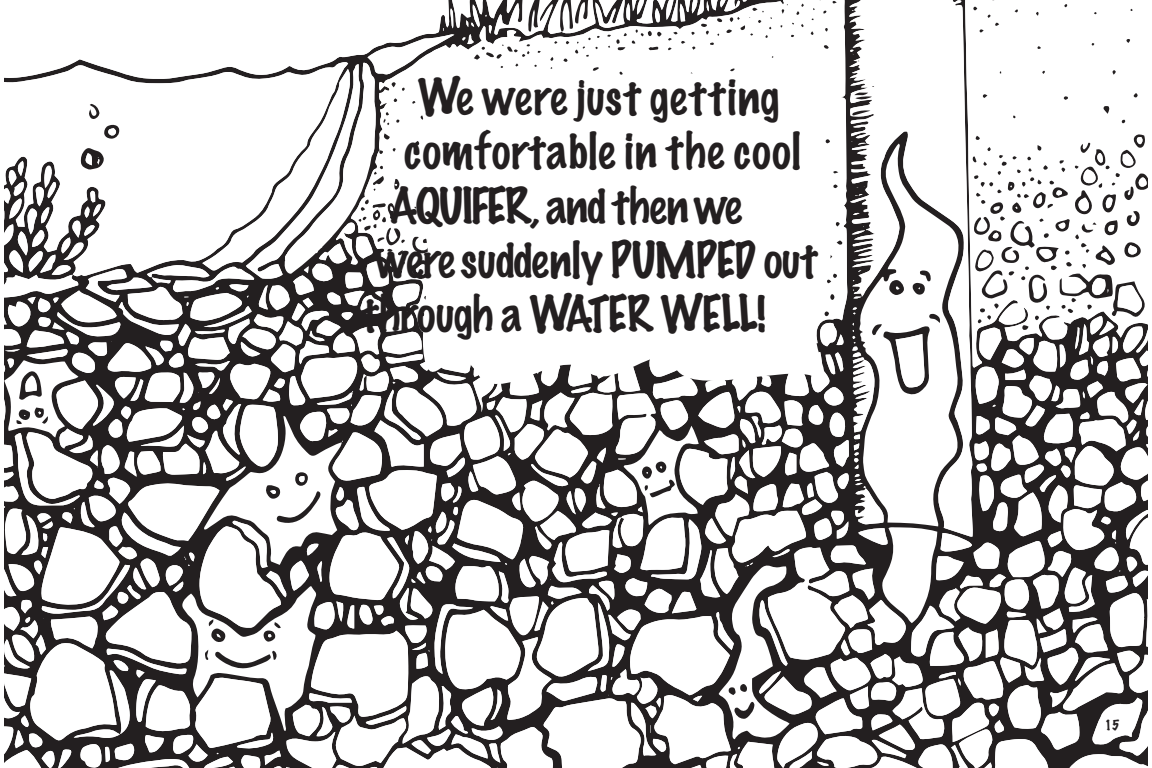


Gravity is pulling me, and so I
have to change my shape to
fit between the rocks.
Thank goodness
I'm flexible!

Now we've traveled from
the surface water into
the ground...

so you can call us
GROUNDWATER!

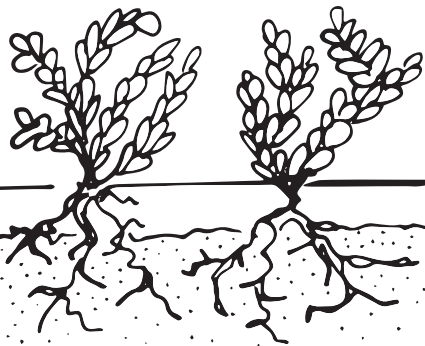


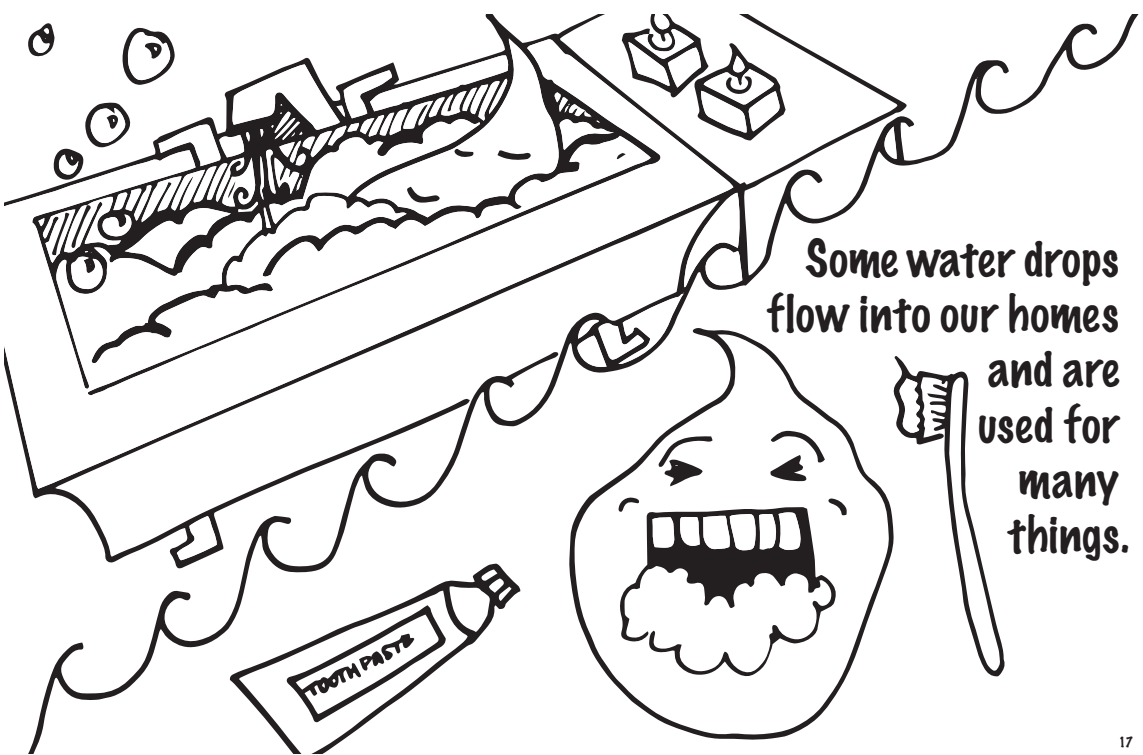


We were just getting comfortable in the cool **AQUIFER**, and then we were suddenly **PUMPED** out through a **WATER WELL!**

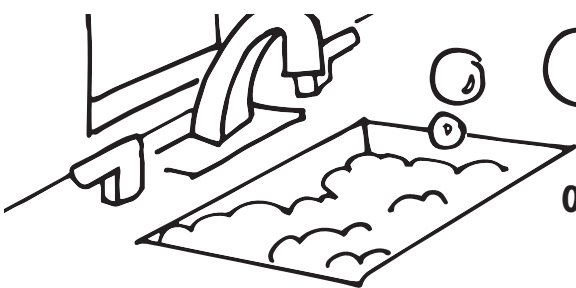
I'm still underground, but
now I'm flowing fast through
PIPES that lead to homes...

...and businesses! I wonder where
I'll go! Maybe to your home?!



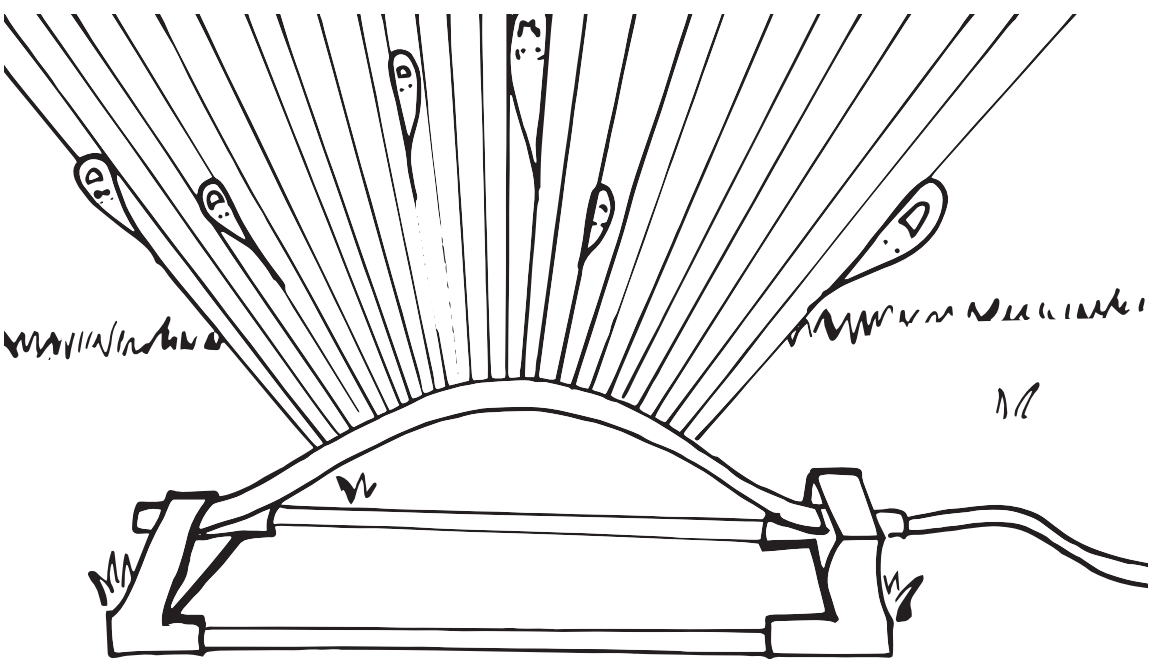


Some water drops
flow into our homes
and are
used for
many
things.



Water drops
that go down
our drains...

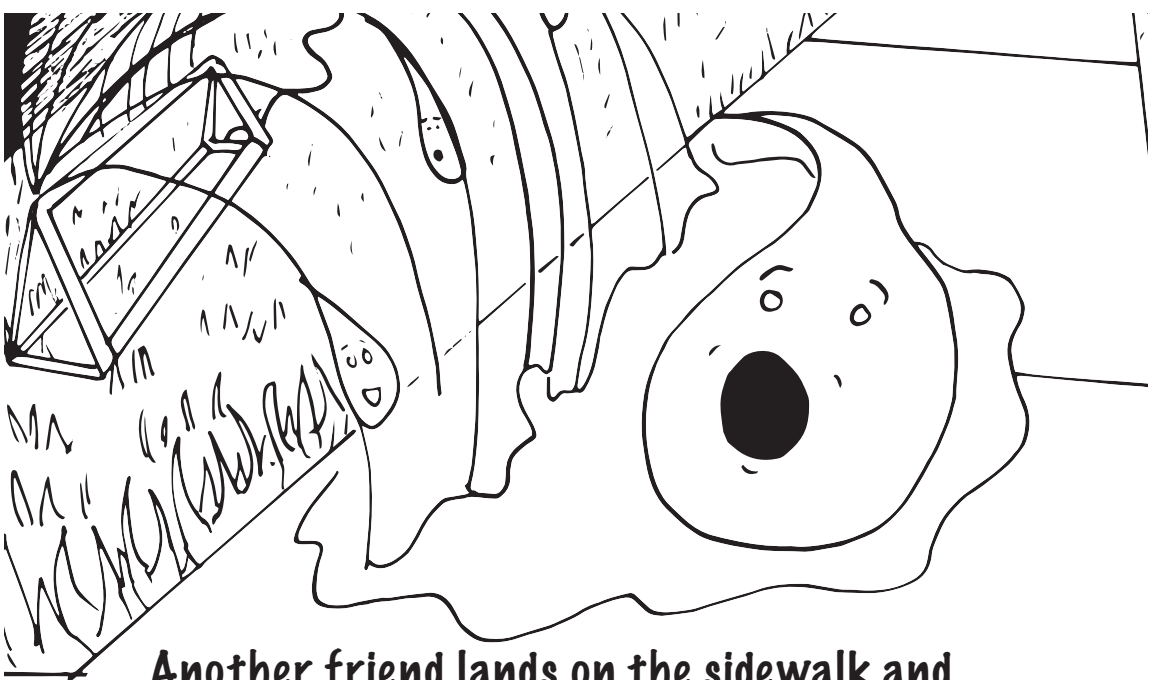




Woo! Here we go out through a sprinkler! Weeee!!!



Oh NO! My friend
landed on an oil spill!
That's **STORMWATER
POLLUTION!**



Another friend lands on the sidewalk and **EVAPORATES** without helping the grass.

A decorative border with a wavy, scroll-like pattern surrounds the text. At the top center of the border is a stylized figure with two circular eyes and a pointed bottom, resembling a water drop or a simple face.

How can you conserve water
inside and outside of your home?



I've landed on a
blade of grass...

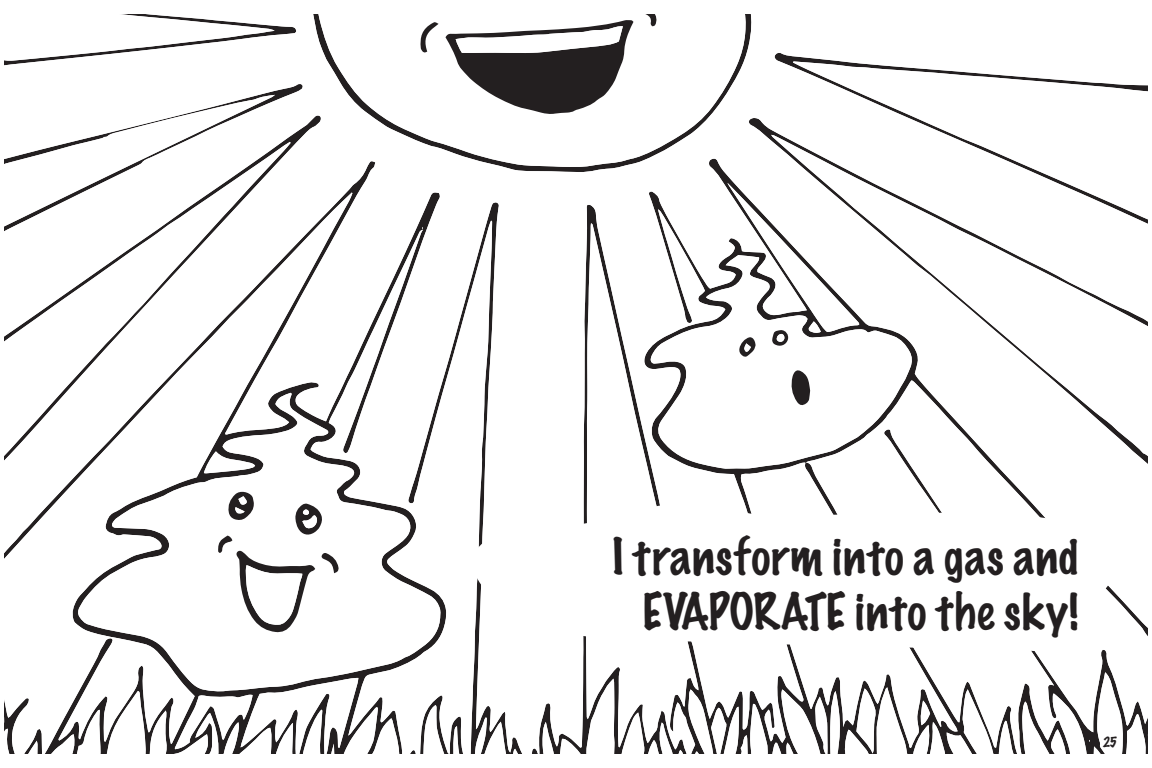
...but am feeling too
dizzy and warm from
the heat to help
the grass.



I start to feel even warmer...

**...and begin to float
in the air!**





I transform into a gas and
EVAPORATE into the sky!



As I rise high in the atmosphere...

...I've cooled back down...

...and **CONDENSE** into a cloud.

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I've now completed the **WATER CYCLE!**
Time to rest in the clouds until
the cycle begins again!



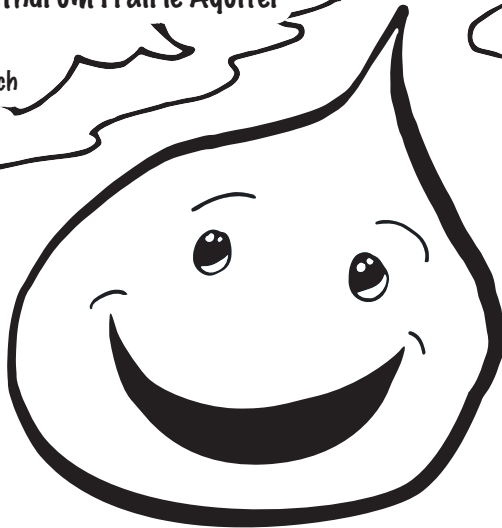
The Adventures of Drippy the Water Drop!


A Spokane Valley Rathdrum Prairie Aquifer
Water Cycle Lesson

Artwork by Kayla Wakulich
Graphics by Eric Miller



Funded by the Idaho Washington
Aquifer Collaborative
www.IWAC.us





Drippy the Water Drop - A Spokane Valley Rathdrum Prairie (SVRP) Aquifer Water Cycle Lesson is provided by the Idaho Washington Aquifer Collaborative (IWAC), a regional nonprofit collaboration partnering in shared stewardship of the Spokane Valley Rathdrum Prairie Aquifer, and the Spokane River watershed. Our goal is to maintain and enhance water quality for present and future generations. Drippy is available in full-color or in a black and white (coloring) version. A pdf of the card sets can be downloaded at www.iwac.us.

Contact local informal educators for a classroom visit or field trip to a local area hydropower facility, historic water well, wastewater treatment facility, wetland or creek.

City of Spokane Water & Stormwater - Kristen Zimmer - kzimmer@spokanecity.org

Coeur d'Alene Lake Waterkeeper | KEA - kea@kealliance.org

Kootenai County Aquifer Protection District - Kristy Reed Johnson - kristyrj@roadrunner.com

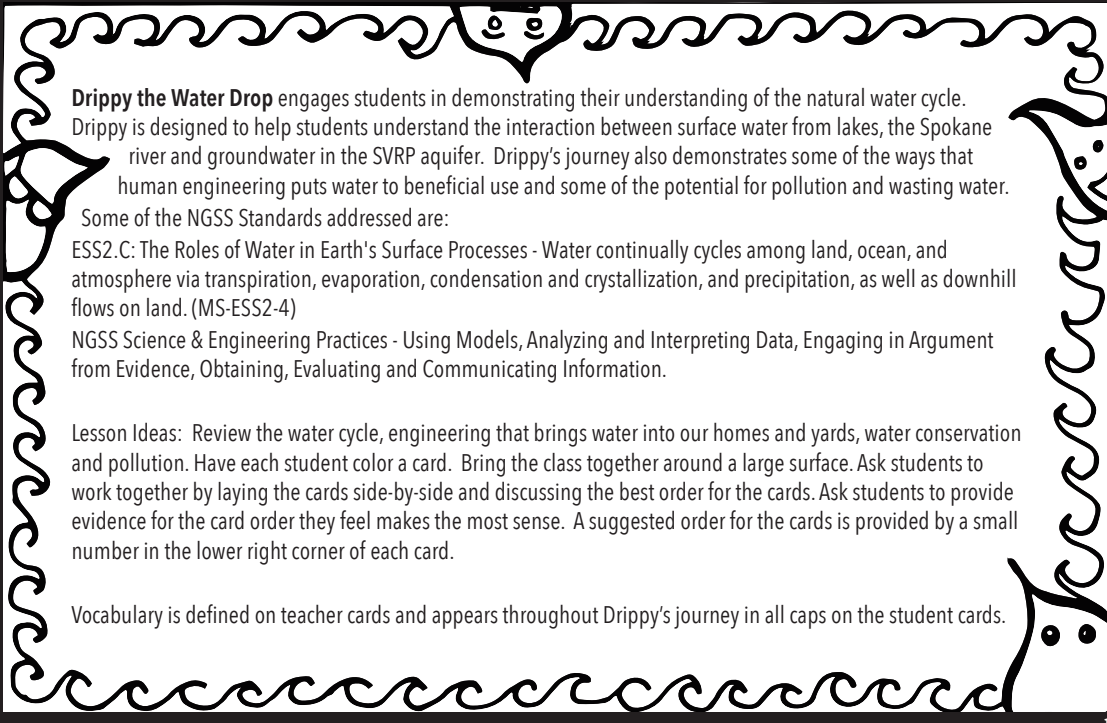
Spokane Aquifer Joint Board - Tonilee Hanson - sajbinfo@gmail.com

Spokane County Water Resource Center - Toni Taylor - tntaylor@spokanecounty.org

University of Idaho Extension - Jim Ekins - jekins@uidaho.edu

Idaho Dept of Environmental Quality - Alyssa Gersdorf - alyssa.gersdorf@deq.idaho.gov

Spokane Conservation District - Stacey Selcho - stacey-selcho@sccd.org



Drippy the Water Drop engages students in demonstrating their understanding of the natural water cycle. Drippy is designed to help students understand the interaction between surface water from lakes, the Spokane river and groundwater in the SVRP aquifer. Drippy's journey also demonstrates some of the ways that human engineering puts water to beneficial use and some of the potential for pollution and wasting water.

Some of the NGSS Standards addressed are:

ESS2.C: The Roles of Water in Earth's Surface Processes - Water continually cycles among land, ocean, and atmosphere via transpiration, evaporation, condensation and crystallization, and precipitation, as well as downhill flows on land. (MS-ESS2-4)

NGSS Science & Engineering Practices - Using Models, Analyzing and Interpreting Data, Engaging in Argument from Evidence, Obtaining, Evaluating and Communicating Information.

Lesson Ideas: Review the water cycle, engineering that brings water into our homes and yards, water conservation and pollution. Have each student color a card. Bring the class together around a large surface. Ask students to work together by laying the cards side-by-side and discussing the best order for the cards. Ask students to provide evidence for the card order they feel makes the most sense. A suggested order for the cards is provided by a small number in the lower right corner of each card.

Vocabulary is defined on teacher cards and appears throughout Drippy's journey in all caps on the student cards.

VOCABULARY

aquifer (n) c15: a water-bearing layer of rock, sand, or gravel capable of absorbing water*

condense (v) c25: to change from a less dense to a denser form*

As water vapor rises up high in the sky it cools and turns back into a liquid, forming clouds.

evaporates (v) c21: changes into vapor or a gaseous state from a liquid or solid state

Energy from the sun heats up water and changes from a liquid into a gas or vapor

groundwater (n) c14: water that collects or flows beneath Earth's surface that supplies wells and springs*

melting (v) c5: to change from a solid to a liquid state usually through heat*

pipes (n) c16: a long tube or hollow body for carrying a substance (as water, steam, or gas)*

pollution (n) c20: substances that are harmful to the environment and not safe or suitable to use

precipitation (n) c3: water that falls to the earth as hail, mist, rain, sleet, or snow*

When too much water has condensed, the water droplets in the clouds become too big for the air to hold them and so they fall back down to Earth as rain, snow, hail or sleet.

pumped (v) c15: past tense to draw or move fluid especially by suction or pressure or both

runoff (n) c6: water from rain or snow that flows over the surface of the ground and finally into streams*

VOCABULARY

stormwater (n) c20: surface water resulting from heavy falls of rain, snow and snow/ice melt
Rainwater or melting snow that runs down streets and off of lawns and driveways. Stormwater can pick up pollutants like oil, fertilizer, and chemicals and carry them into storm drains, rivers and streams.

surface water (n) c7: water that sits above ground in rivers, lakes, wetlands and oceans

water cycle (n) c27: the series of conditions through which water naturally passes from water vapor in the air to being deposited (as by rain or snow) on earth's surface and finally back into the air especially as a result of evaporation*

The continual movement of water among Earth's atmosphere, oceans, and land surface through evaporation, condensation, and precipitation.

watershed (n) c7: an area of land bounded peripherally by a divide and draining ultimately to a body of water
an area of land that contains a common set of streams and rivers that all drain into a single larger body of water

wastewater (n) c18: water that has been used by humans in washing, flushing, manufacturing, etc.; sewage.

water well (n) c15: a hole sunk into the earth to reach a supply of water

*FROM MIRIAM WEBSTER'S KID FRIENDLY DICTIONARY
WORDCENTRAL.COM