

Learning about water:

WATER YOU KNOW



EVERETT
WASHINGTON

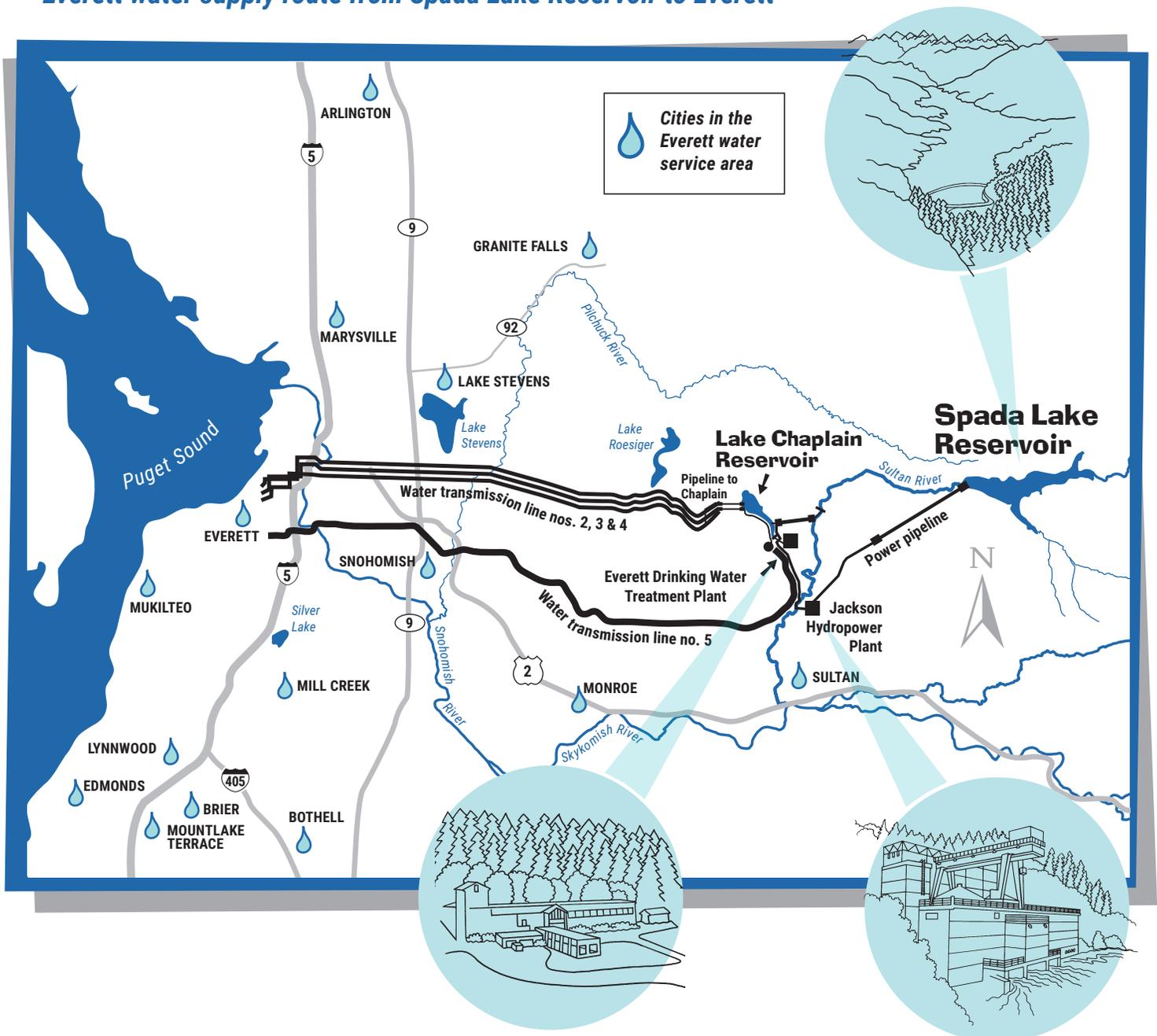
A companion activity guide to the hands-on classroom water workshop

Introduction for teachers and parents

This *WATER YOU KNOW* booklet is part of the *LEARNING ABOUT WATER* programs provided by the City of Everett and water providers in the Everett water service area. Your student or child recently participated in the school classroom part of this program and has received this booklet to reinforce our water messages. It is a tool that can be used in school or at home. Please talk about what was presented at school and encourage your child to complete the take-home portions. Finally, encourage your child's good water-use habits by creating a conscious and careful water-use home.

When your child has finished the booklet exercises, we hope you find a place of prominence to proudly display the certificate of completion located on page 24.

Everett water supply route from Spada Lake Reservoir to Everett



Welcome to ***WATER YOU KNOW***

We hope you have fun learning about your water and water conservation using this booklet. Please make the booklet your own by writing, coloring and drawing in it.

Activity guide contents

Introduction for teachers and parents i

Everett water supply route i

Table of contents ii

Picture-word and water cycle glossaries 1-2

Planet water 3

Crossword puzzle 4

Amazing water journey 5

Water: it's a balancing act 6

Use versus waste 7

Magic trick 7

Water use challenges 8

Water poetry 9

Memory cards 10-13

Water you know 14

Find the water wasters 15

Find the water savers 16

Water and you 17

Your drinking water lifeline 18-19

Destiny decoder 20-21

Key 22

Water web for kids 23

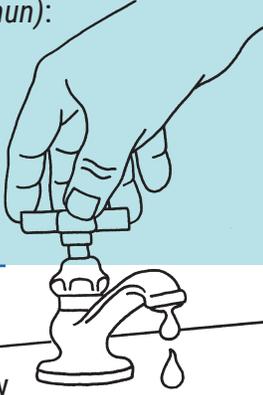
Certificate of completion 24

Picture-word glossary

You have been learning about your water, where your water comes from and why you should conserve water. To help remember your vocabulary words, refer to the picture-word glossaries.

conservation

(kon-sur-vay-shun): careful use of natural resources such as water.



conserve

(kon-surv): to use carefully without waste.

Conserve water by turning off the faucet.

drinking water

(dring-king waw-tur): treated water that is safe for people to drink.

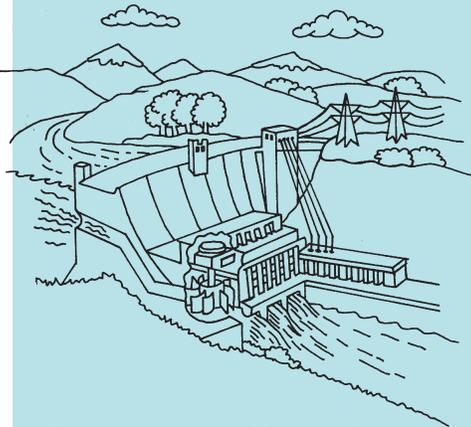


fresh water

(fre-shh waw-tur): untreated water in lakes, streams and rivers; not salt water.

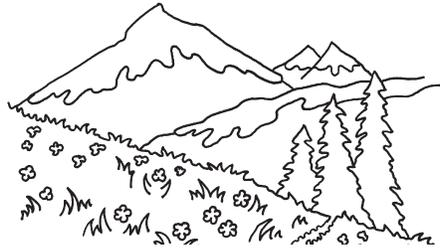
hydropower

(hi-dro pow-er): electric energy that is generated by the movement of water.



Electricity is generated by water flowing through a **hydropower** plant.

mountain (mow-n-ten): a high and often rocky area of a land mass with steep or sloping sides.



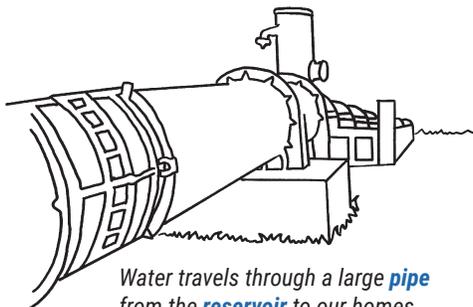
Snow and rain from the **mountains** feed **fresh water** into our lakes and rivers.

natural resources (na-chur-ul ree-sawrs-ses): materials in nature that we can use such as water.



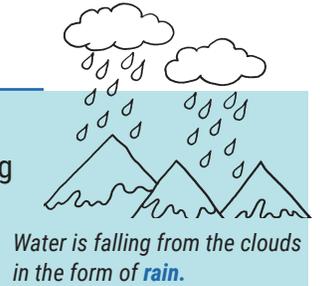
Rivers and trees are some of the **natural resources** that are part of our **watershed**.

pipe (piep): a tube for water, oil, or other liquids to pass through.



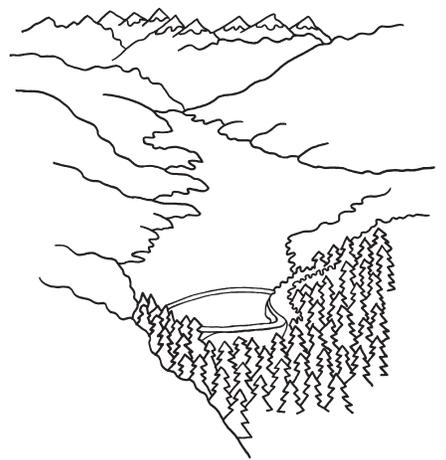
Water travels through a large **pipe** from the **reservoir** to our homes.

rain (rayn): water falling from the clouds.



Water is falling from the clouds in the form of **rain**.

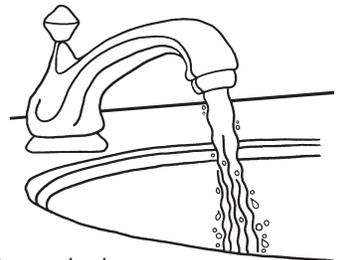
reservoir (rez-zer-vwaar): a large tank or lake for storing water.



Spada Lake (spay-da layk): the reservoir in Snohomish County from which we get our drinking water.

waste

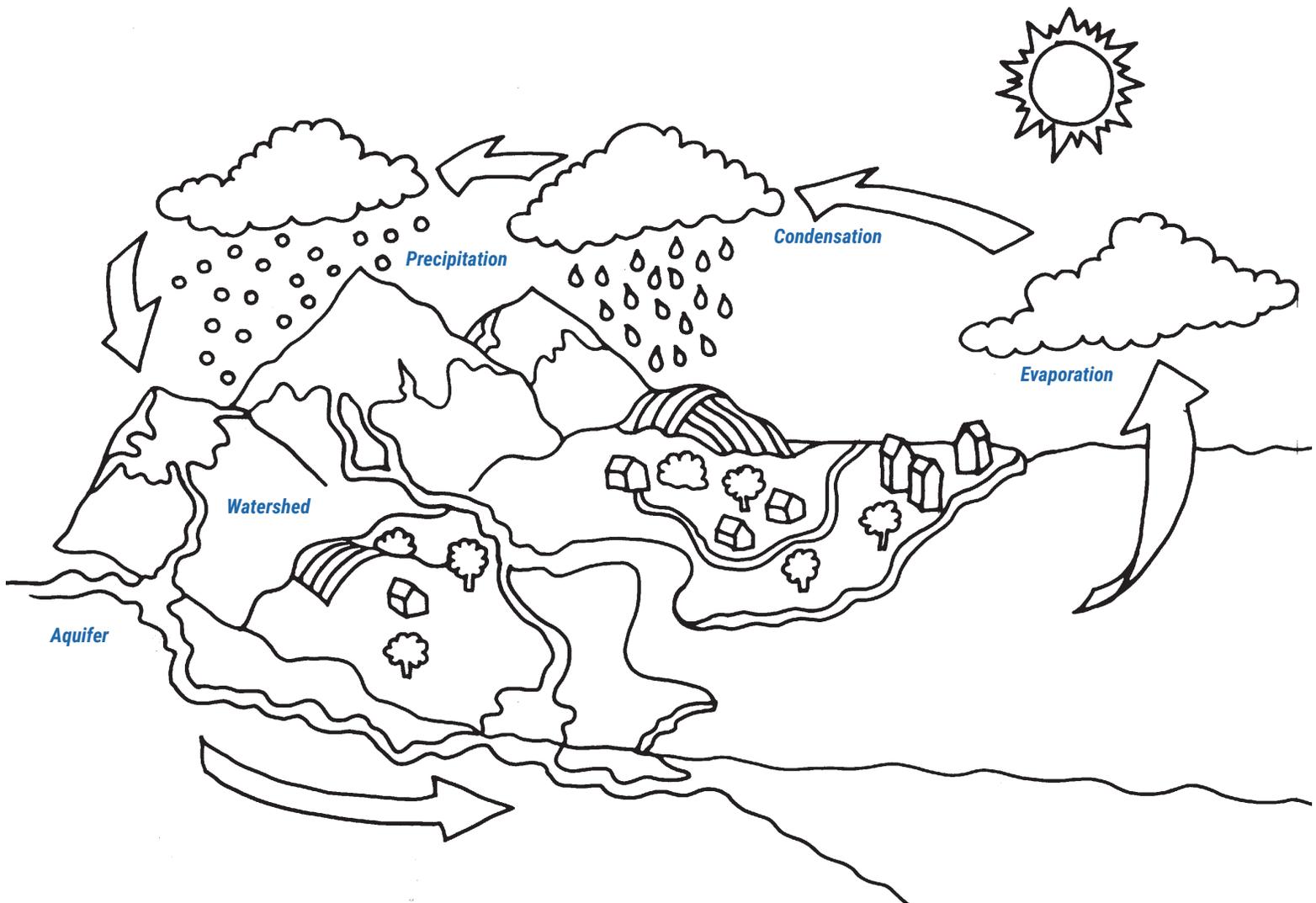
(way-st): to use carelessly.



Leaving water running is an example of **waste**.

water lifeline (waw-tur lie-f-lie-n): the path water takes from the clouds to get to a water glass in your home.

Water cycle glossary



aquifer (*ahk-wa-fur*): a group of rock formations where underground water is found.

condensation (*kon-den-say-shun*): process in which vapor loses heat and changes into liquid, for example: cloud vapor turning into rain.

drainage basin (*drayn-ij bays-in*): land area that drains rain or melted snow into a stream, river or lake; watershed.

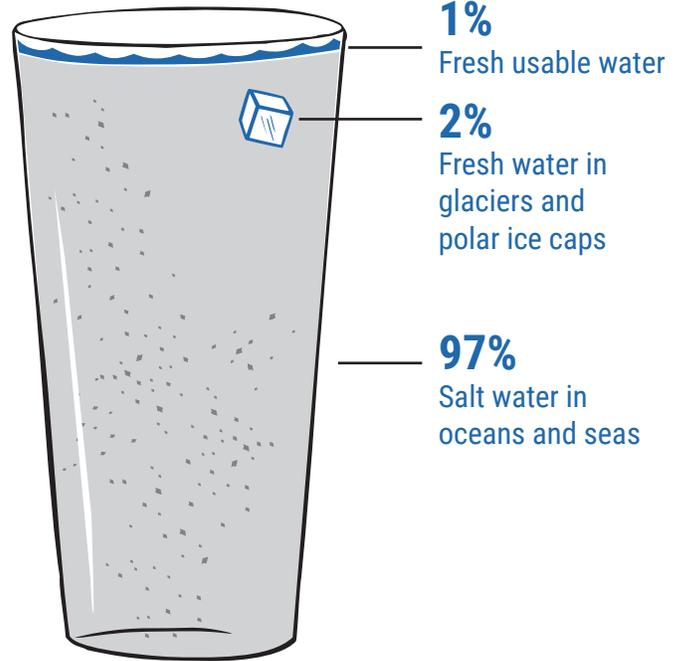
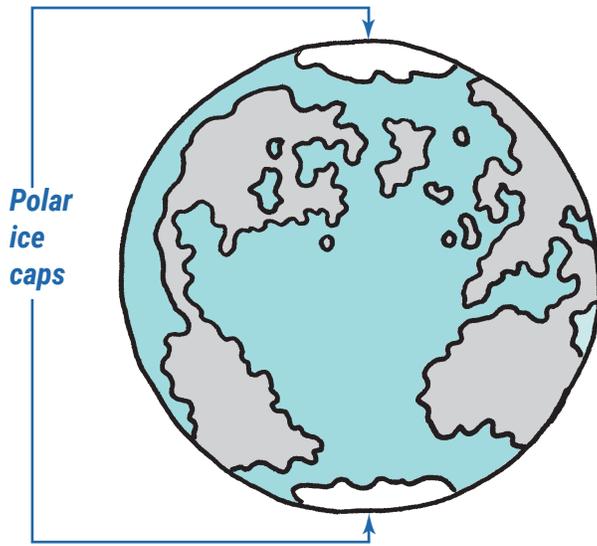
evaporation (*ee-vaap-or-ay-shun*): process in which something is changed from liquid into gas or vapor without its temperature reaching the boiling point.

precipitation (*pree-sip-i-tay-shun*): rain, snow or hail, all of which are formed by condensation of moisture in the air and fall to the ground.

water cycle (*waw-tur sy-kul*): natural pathway of water from clouds to rain to the earth and back into the clouds that occurs again and again.

watershed (*waw-tur shed*): land area that drains rain or melted snow into a stream, river or lake; drainage basin.

Planet water



Imagine that all of the water on earth is in a glass or water bottle. Do you remember what makes about 97 percent of the water different from fresh water? That's right, about 97 percent of Earth's water is SALT water found in oceans, seas and even Puget Sound. Salt water is not drinkable without treatment.

The remaining three percent of Earth's water is FRESH water. More than half of the fresh water is unusable because it is frozen. It is stored in glaciers and the polar icecaps. About one percent of Earth's water is fresh water that we can use. The surface water is found in ponds, lakes, streams and rivers. The water below ground is found in aquifers and wells.

Most of the drinking water in Snohomish County comes from rain and snow that falls in the Upper Sultan River Watershed. The rain and snowmelt then runs into Spada Lake Reservoir. The next stop for some of the water is at the Jackson Hydropower Plant where about five percent of Snohomish County's electricity is generated. From the power plant, some of the water is returned to the Sultan River for fish and wildlife. Some of the water travels to Lake Chaplain Reservoir and the Everett Drinking Water Treatment Plant where it is filtered and treated. The treated water travels in large pipes to Everett. It then travels through a system of smaller pipes to your home and the homes of about 627,000 Snohomish County residents.

Even though we have an abundant supply of fresh water, conservation is important. Conservation makes sure our water resource is available now and in the future.

True or false?

DIRECTIONS:

Circle **T** for **true** by the true statements and **F** for **false** by the false statements.

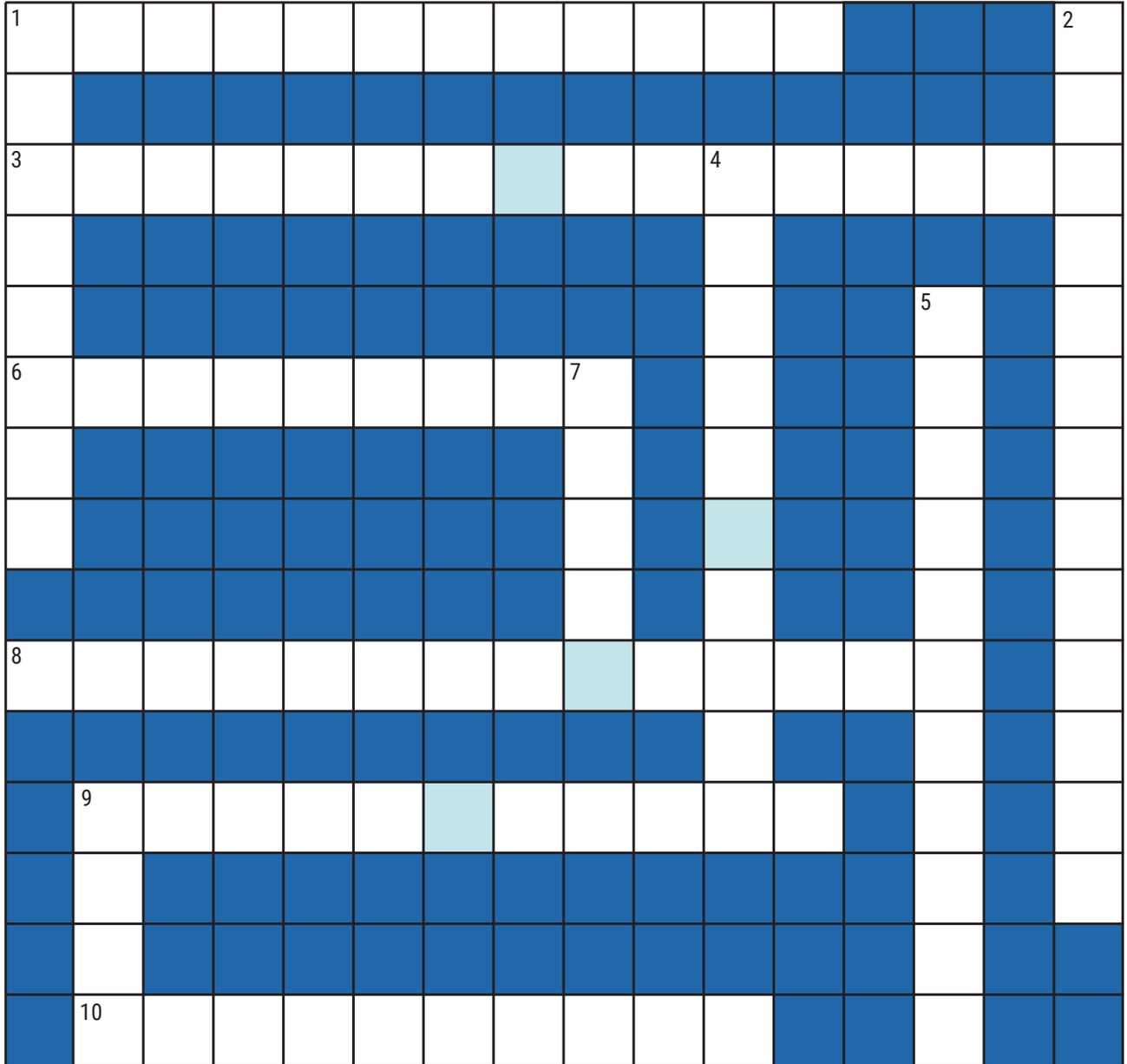
	<i>true</i>	<i>false</i>
1. 92 percent of Earth's water is salt water.	T	F
2. There is enough water for everyone, but conservation is important.	T	F
3. All of the fresh water on Earth is available for us to use.	T	F
4. Lakes, ponds, streams and seas are sources of fresh water.	T	F
5. Water below ground is found in aquifers.	T	F

Crossword puzzle

DIRECTIONS: Use your water vocabulary to complete the crossword puzzle.

Hint: Review the glossaries on pages 1-2 for clues.

Challenge your water vocabulary



ACROSS

1. water changing from gas or vapor to liquid
3. materials in nature we can use such as water
6. a lake or tank for storing water
8. treated fresh water
9. untreated water from mountains, lakes, streams and aquifers
10. energy that is generated by the movement of water; electricity

DOWN

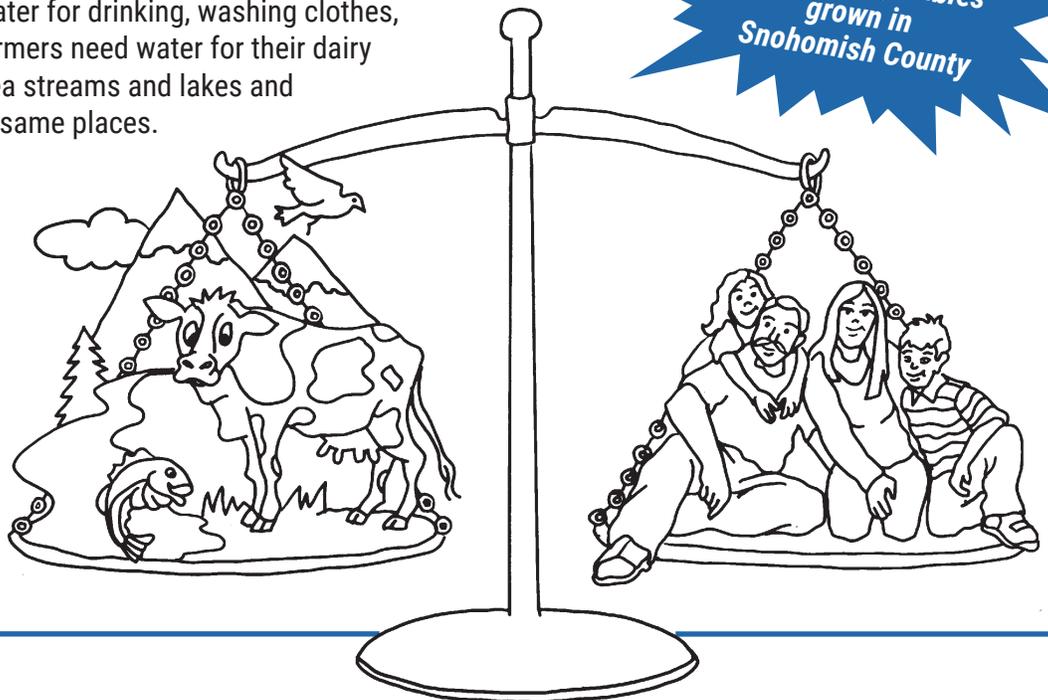
1. to use carefully without waste
2. condensation of moisture in the air that falls to the ground
4. the reservoir that holds most of the water we use in Snohomish County
5. water changing from liquid into gas or vapor
7. water falling from clouds
9. animal found in streams

Water: it's a balancing act

Water is a shared resource needed by humans and animals. Families and businesses use water for drinking, washing clothes, cleaning and making things. Farmers need water for their dairy cattle and crops. Fish live in area streams and lakes and many animals drink from those same places.

When we turn on a light or use a computer we are using water because most of our electricity is generated by the movement of water through a hydropower plant.

Using water wisely helps protect our water resource for use today and in the future.



EXTRA: Name some fruits or vegetables grown in Snohomish County

Word search

DIRECTIONS: Fill in the blanks with the word that completes the sentence. *Hint:* Look for the answers above.

- ___ ___ ___ ___ live in area streams and lakes.
- One way ___ ___ m ___ ___ ___ ___ use water is for washing clothes.
- ___ ___ r ___ ___ ___ use water for their cattle and crops.
- ___ ___ ___ ___ ___ w ___ ___ is electric energy generated by the movement of water.

Message puzzle

DIRECTIONS: Solve the message puzzle by using the message puzzle decoder. Locate each blue letter on the decoder, then write the corresponding black letter on the space provided to reveal the water conservation message.

___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___ ___

D R P F A I P O F K R P C Z

Message puzzle decoder

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

Use versus waste

We all need to use water every day.

But what is the difference between **using** water and **wasting** water?

Look at the 12 examples of water use below.

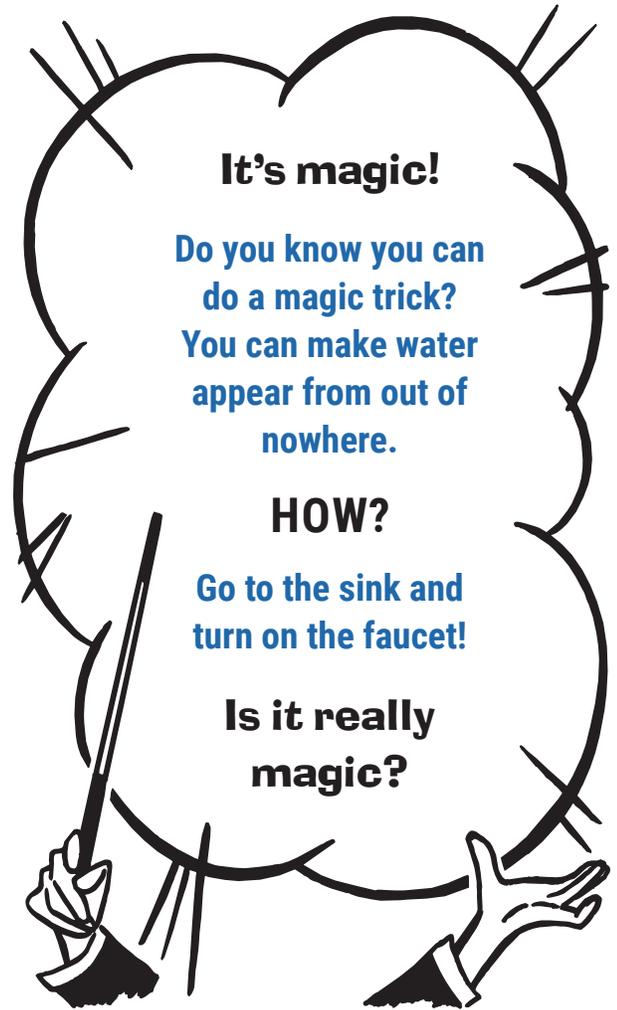
Do you know which ones are **using water wisely**?

DIRECTIONS:

Write **"U"** next to each item showing a choice of **"using"** water wisely.

Write **"W"** next to each item showing a choice of **"wasting"** water.

- _____ 1. Taking a 20-minute shower
- _____ 2. Taking a 5-minute shower
- _____ 3. Filling a sink with soapy water to wash dishes
- _____ 4. Letting the water run while washing dishes by hand
- _____ 5. Using water to "wet and rinse" when washing hands
- _____ 6. Leaving the water running when washing hands
- _____ 7. Using water to "wet and rinse" tooth brush when brushing teeth
- _____ 8. Leaving the water running when brushing teeth
- _____ 9. Filling the bathtub one-half full or less when taking a bath
- _____ 10. Filling the bathtub to the top when taking a bath
- _____ 11. Running the water until it gets cold for a glass of drinking water
- _____ 12. Keeping a pitcher of water in the refrigerator for cold drinking water



Water use challenges

DIRECTIONS: Solve the following story problems. Show your work and your answer in the work box.

1. If you leave the water running when you brush your teeth, you use about three gallons of water. If you brush your teeth two times a day with the water running, how much water do you use daily brushing your teeth?

1

2. If you brush your teeth two times a day, each day of the week, with the water running, how much water do you use weekly? *Hint: How many days are in one week?*

2

3. If you wet your toothbrush, then turn the water off and brush your teeth, then turn the water on to rinse, you use about one-half gallon of water each time you brush your teeth. This is the water saver method. If you brush your teeth two times a day this way, how much water do you use daily brushing your teeth?

3

4. If you brush your teeth two times a day, each day of the week, using the water saver method, how much water do you use weekly?

4

Bonus question

5. How much water does your family use in a week brushing teeth? There can be many answers depending on which method your family members use, how many times your family members brush their teeth, and how many family members you have.

5

Water poetry



Haiku is a form of writing, which started in Japan. It consists of three lines of five, seven and five syllables each. The focus of each line is on the syllables, not on rhyming.

For example: **Water Cycles**
by Lori Tobin

Water crystal clear
Cycles liquid, solid, gas
Sky to earth and back

DIRECTIONS: Write a Haiku poem about water. *Hint:* You can re-read the picture-word water glossary for word ideas.

Free verse is poetry in which the author invents the form. There can be as many lines as the author wants and as many or few syllables in each line as the author wants. The author can use rhyme or not.

For example:

Watershed Lifeline
by Lori Tobin

Rain is swirling, twirling, tumbling,
splish-splashing, bouncing, landing.
It travels through my watershed,
a lifeline for plants, animals and me.

DIRECTIONS: Write a free verse poem about water.

Water saver memory cards

DIRECTIONS:

On the following pages are two sets of memory cards: one set showing **water waster** actions and another set showing **water saver** actions.

Color the memory cards and cut along the dashed lines to separate the cards. Match a **water waster** card to a **water saver** card.

Water
Saver 

Water
Saver 

Water
Saver 

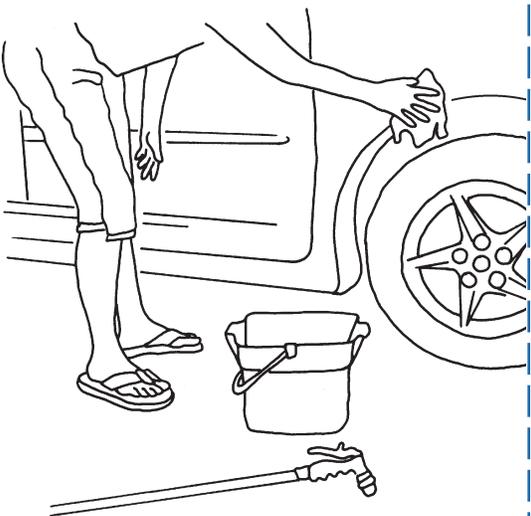
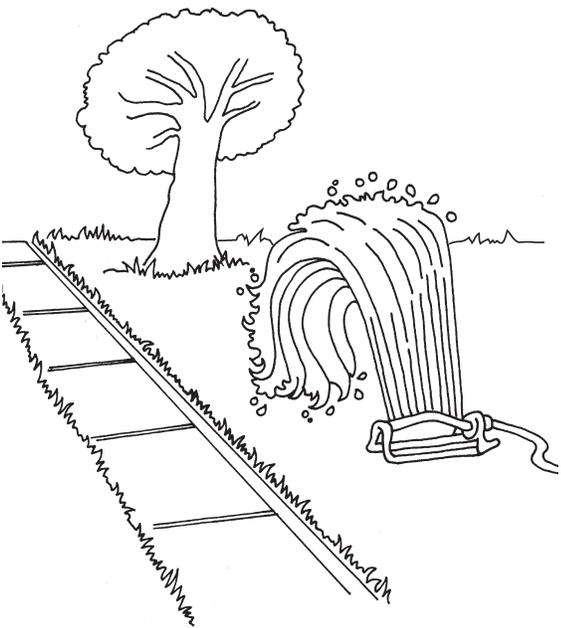
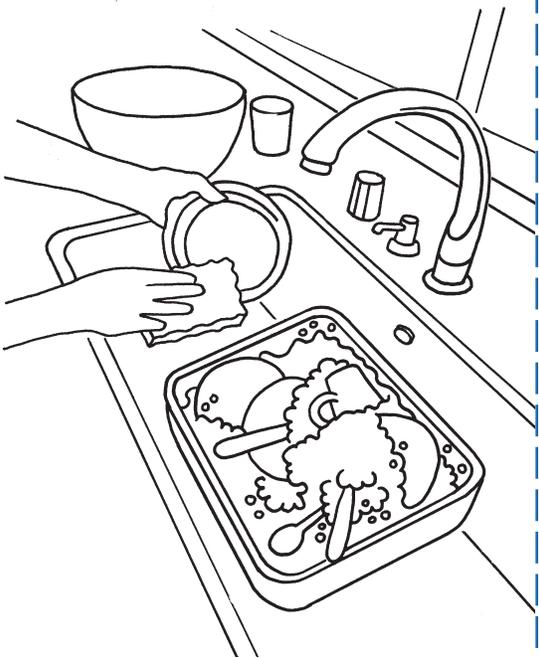
Water
Saver 

Water
Saver 

Water
Saver 

Water saver memory cards

DIRECTIONS: Color the memory cards and cut along the dashed lines to separate the cards. Match a water waster card to a water saver card.



Water waster memory cards

DIRECTIONS:

Color the memory cards and cut along the dashed lines to separate the cards. Match a **water waster** card to a **water saver** card.

WATER
WASTER

WATER
WASTER

WATER
WASTER

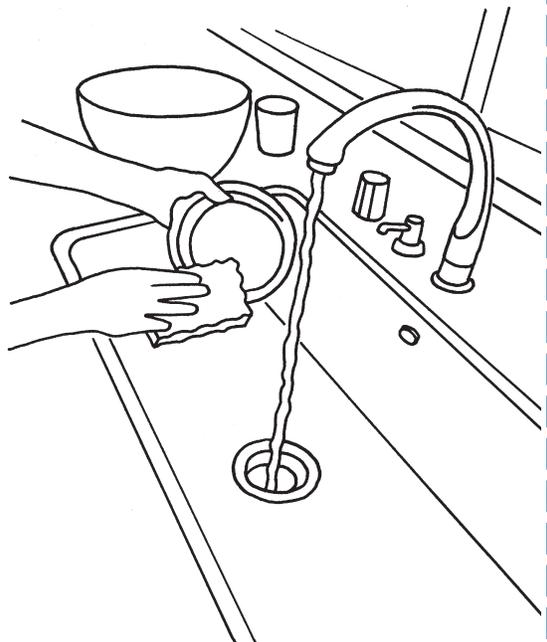
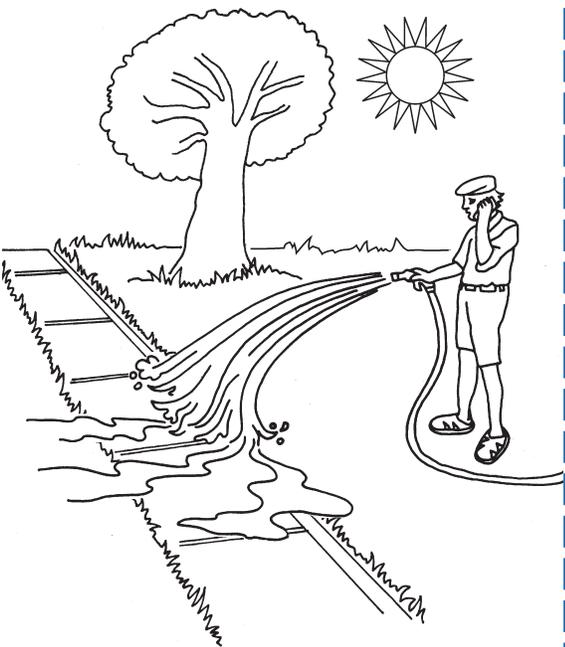
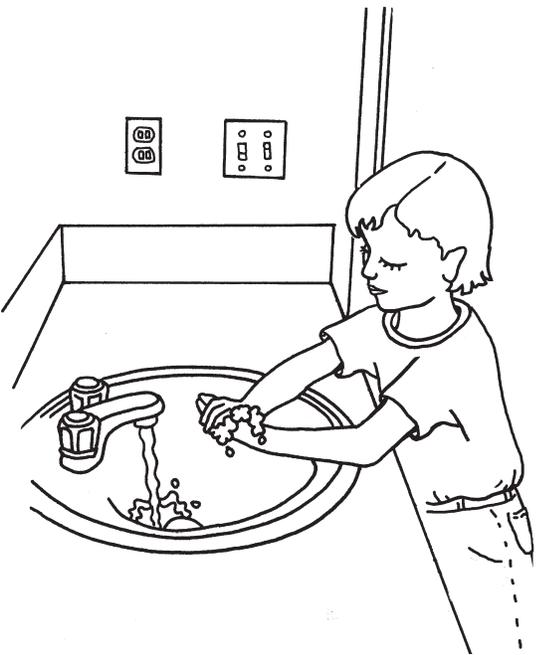
WATER
WASTER

WATER
WASTER

WATER
WASTER

Water waster memory cards

DIRECTIONS: Color the memory cards and cut along the dashed lines to separate the cards. Match a water waster card to a water saver card.



Water you know

DIRECTIONS: Complete the sentence. Draw a line to connect the sentence beginning in the left column with the correct ending in the right column. *Hint:* You can look through the booklet for clues.

1. Your drinking water lifeline begins with . . .

2. Water from the Cascade Mountains is made safe to drink at the . . .

3. Conserve means to . . .

4. You can conserve water in the bathroom by . . .

5. One way you can save water outside is by . . .

6. To wash yourself clean and save water, you should fill your bathtub . . .

7. The City of Everett uses the fresh water that collects in . . .

8. A reservoir is . . .

9. The natural resource that this booklet is about is . . .

10. People share water with . . .

a. turning off the faucet when brushing teeth.

b. using a pail when washing the car.

c. a lake or tank for storing water.

d. clouds and precipitation.

e. Spada Lake Reservoir.

f. animals, bugs, birds and fish.

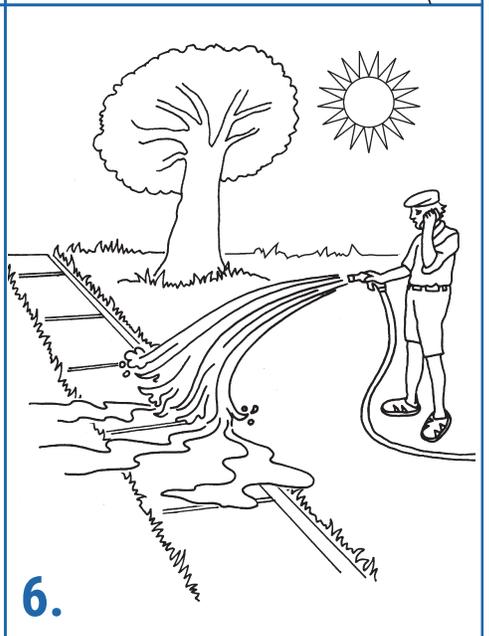
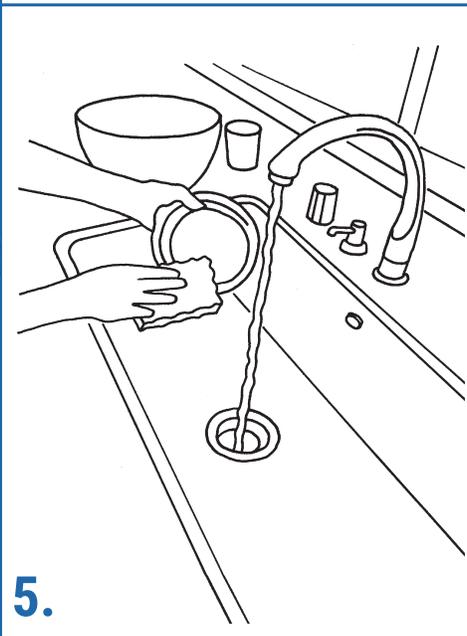
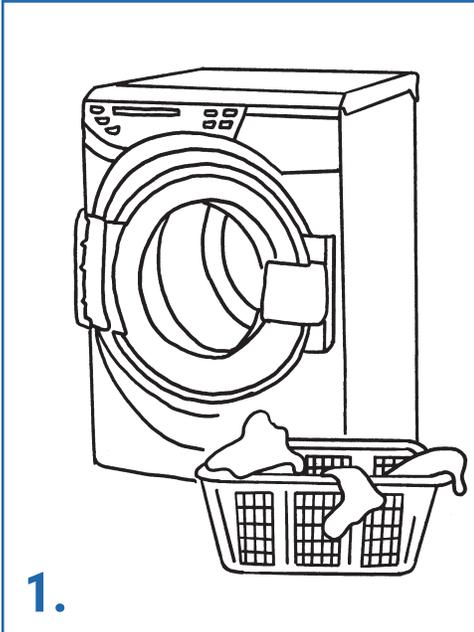
g. one-half full.

h. water.

i. Everett Drinking Water Treatment Plant.

j. save or use wisely.

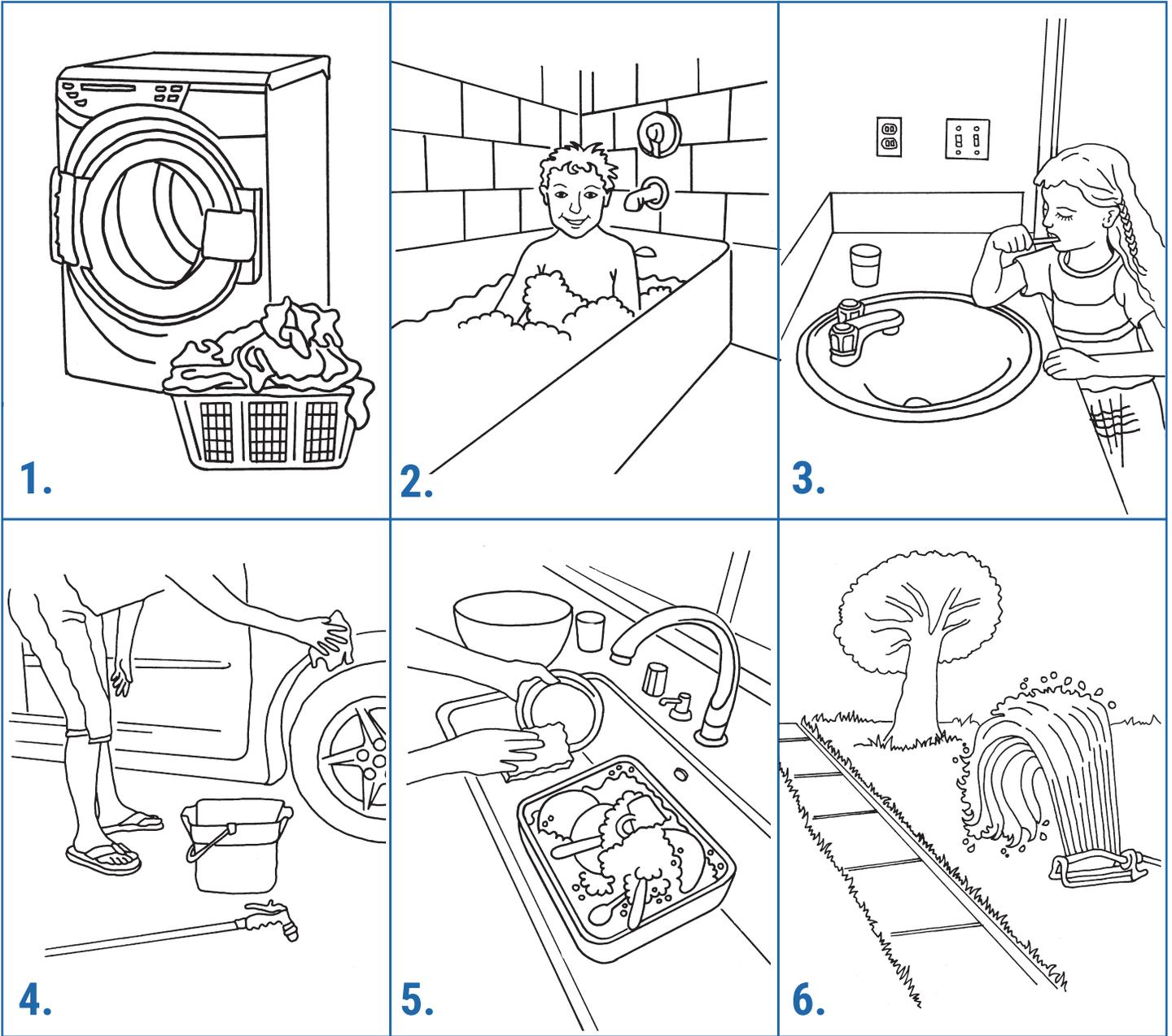
Find the water wasters



DIRECTIONS: Color the water waster cards. Then, on the lines below, list each of the **water waster** actions.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Find the water savers



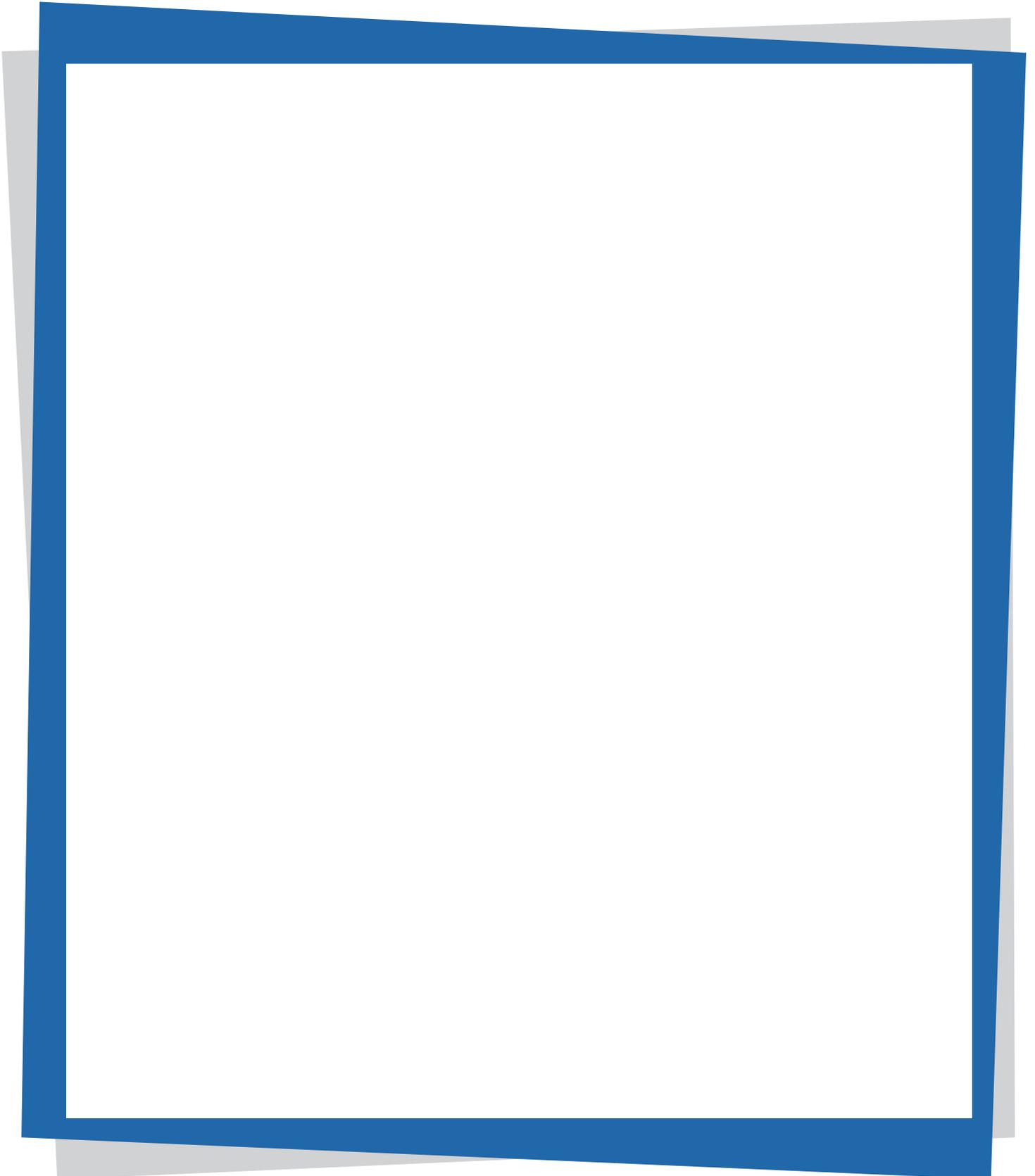
DIRECTIONS: Color the water saver cards. Then, on the lines below, list each of the **water saver** actions.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____

Water and you

Each day when we get up we begin our daily water use.

DIRECTIONS: Draw a picture showing some of your daily water use activities. *Hint:* Some of your daily water use activities may be the same as the activities on the memory cards.

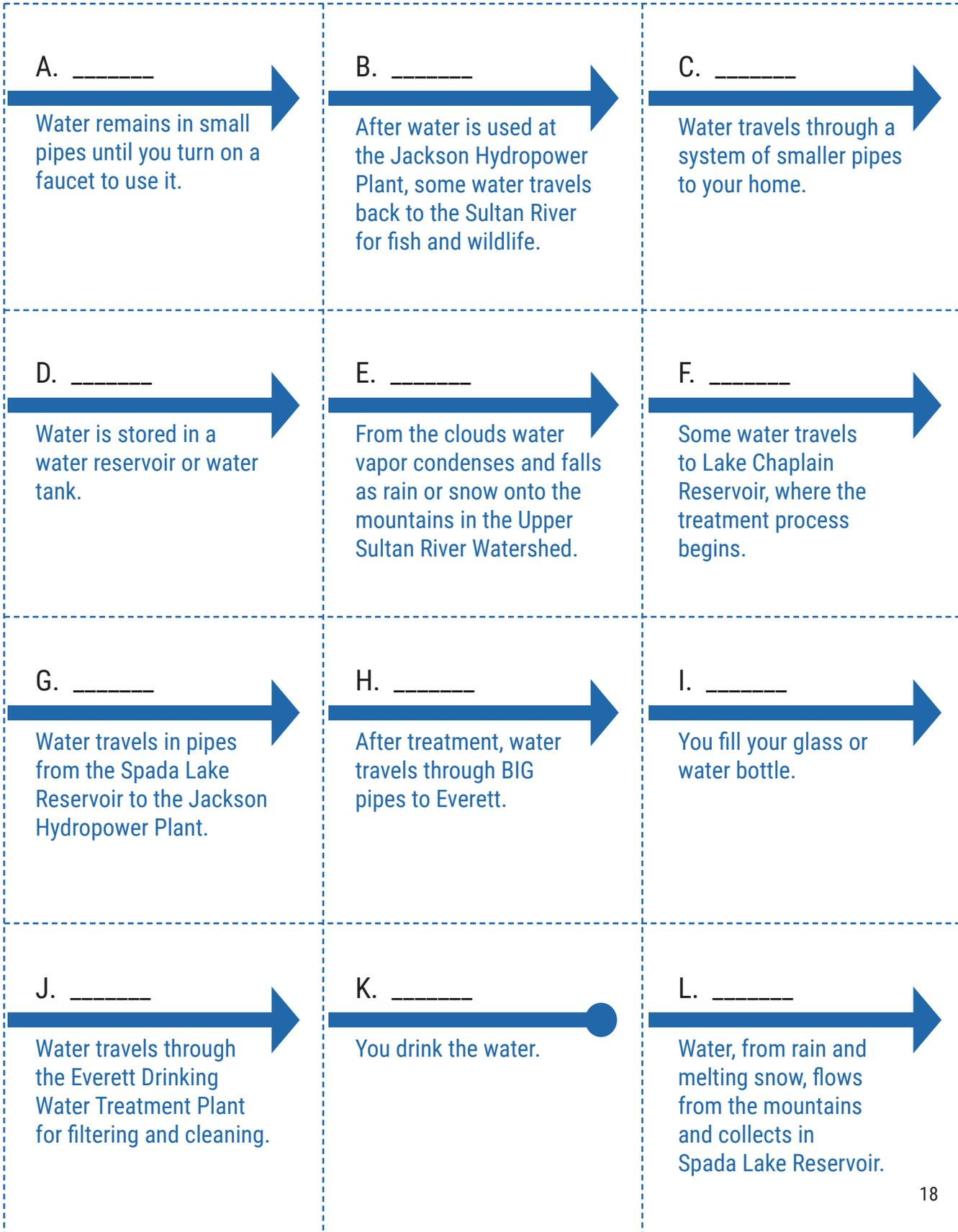


Your drinking water lifeline

The water we drink is part of a water cycle path. Below are sentences that reflect ONE path Snohomish County water may take on its journey to your home. Not all precipitation follows this path: some stays in rivers and lakes, some is used by plants and animals, some stays on the mountain tops as glaciers, and some drains under the surface and is stored in an aquifer. Can you think of other places a raindrop or snowflake might go?

DIRECTIONS:

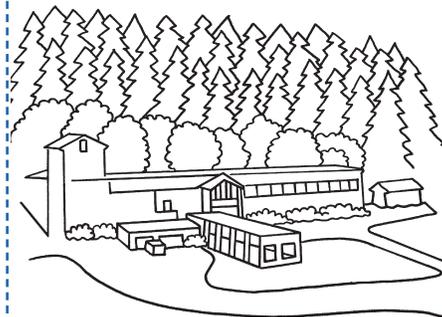
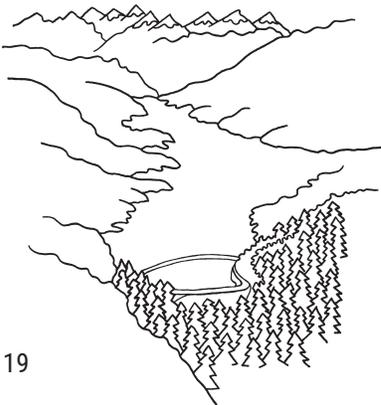
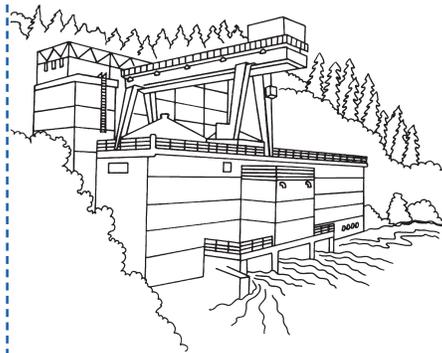
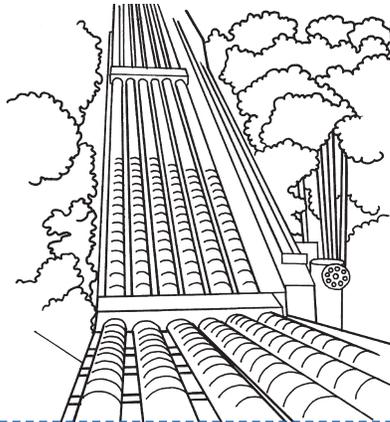
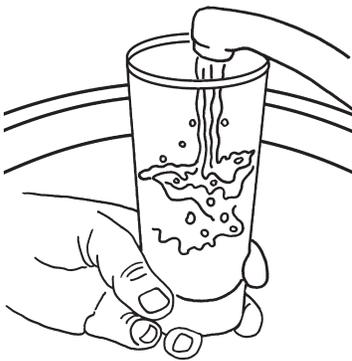
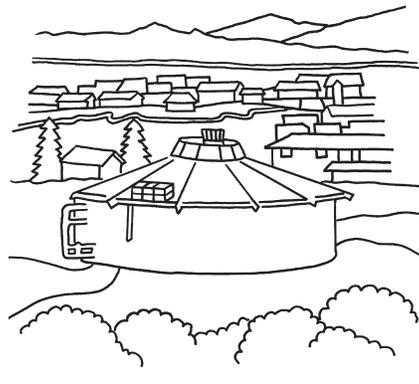
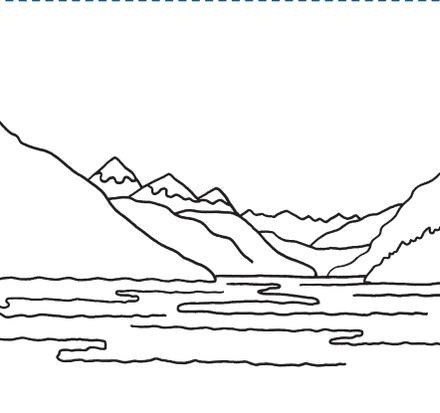
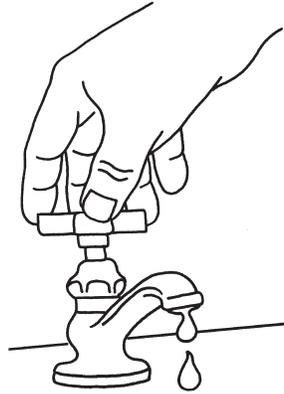
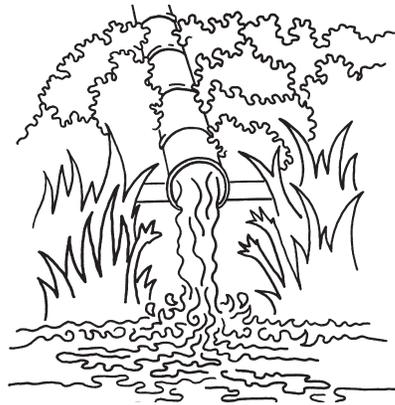
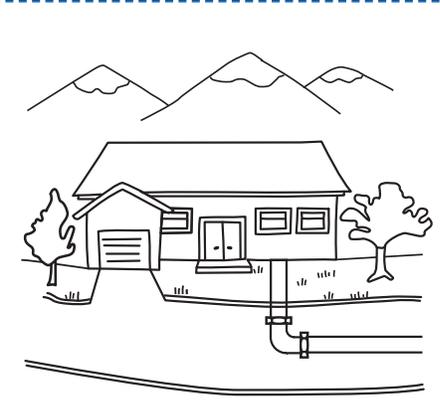
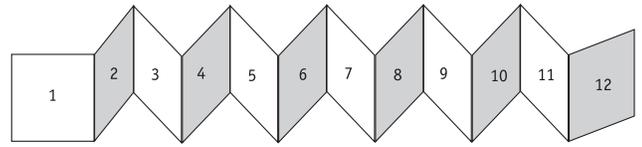
Number the cards from 1 to 12 in the order water travels in our Snohomish County water cycle to get from the clouds to a water glass in your home.



Your drinking water lifeline ...continued

DIRECTIONS: Color the lifeline cards and cut along the dashed lines to separate the cards. Connect them in the order water travels from the clouds to your glass.

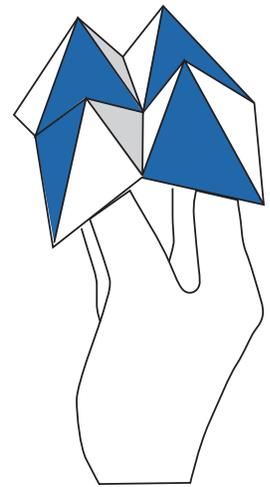
Hint: Review the way you numbered the cards on page 18.



Destiny decoder

DIRECTIONS:

1. Color the destiny decoder corners: blue, red, purple and green.
2. Fold according to the directions on the back of this page.
3. Follow these steps to decode your destiny:
 - Pick a **color**. Move the destiny decoder open and closed, switching directions as you spell out the color.
 - Pick a **word**. Spell out the word moving the destiny decoder once for each letter.
 - Pick a **second word**. Lift the flap to reveal your destiny.



BLUE

RED

Brainiac

With your amazing mind you figure out how water is used for energy. You make other scientific discoveries, become famous around the world and win a Nobel prize.

RAIN

HAIL

WATER conservation champion

OLYMPIC winner

Dude, you rock! Knowing where your water comes from, you use it wisely. Such wisdom makes you a champion of conservation.

Because you only do full loads of laundry and run a full dishwasher, you have fewer chores and more spare time! You take up swimming and win a gold medal at the Olympics.

SLEET

SNOW

PURPLE

GREEN

Master of the seas

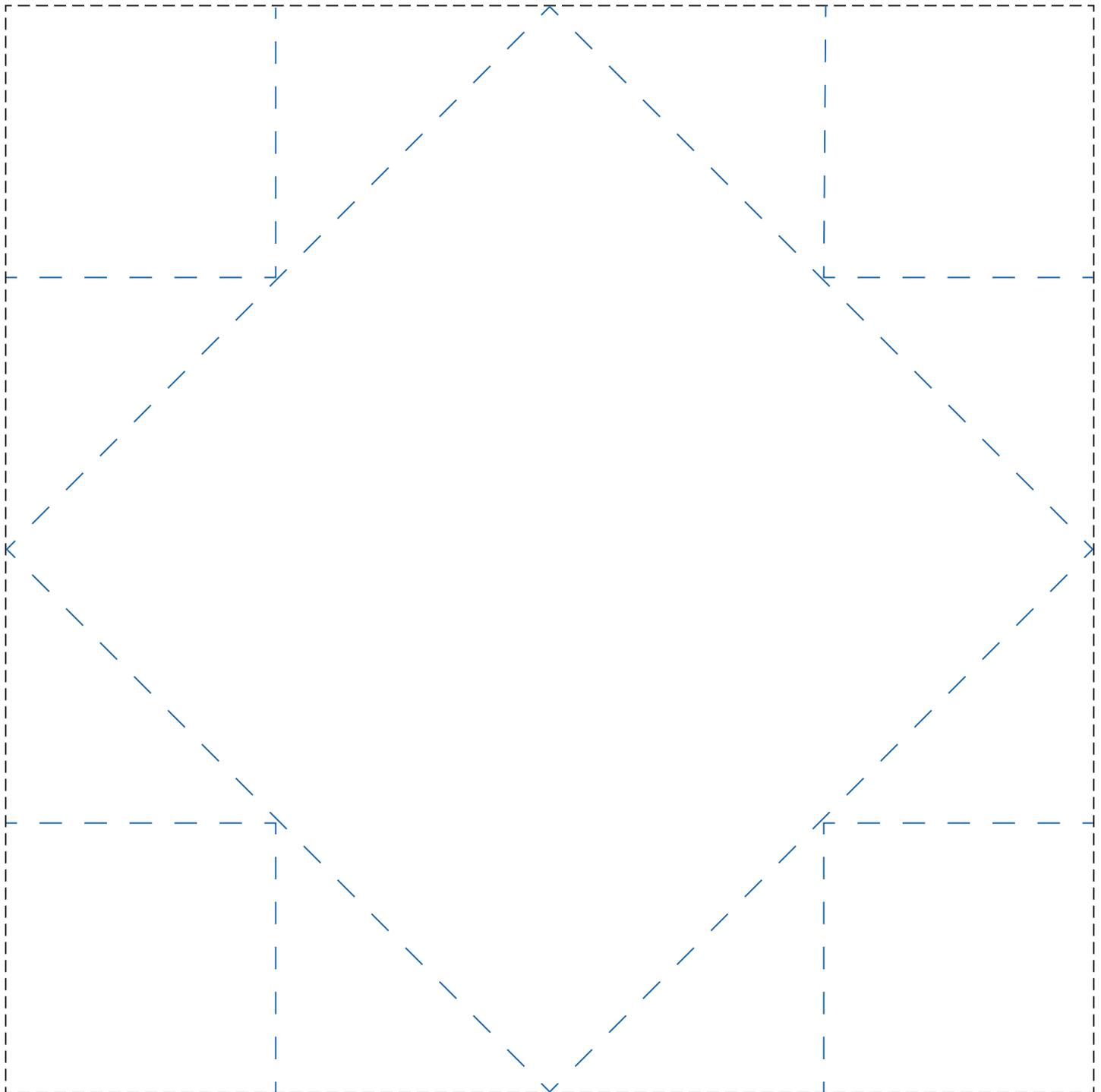
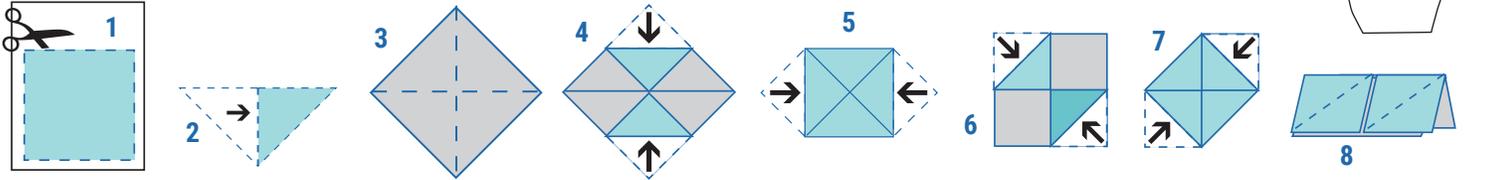
Because you know you share water with many plants, animals and fish, you are careful to keep water clean. The fish name you their favorite person and obey your every command.

POND

STREAM

Destiny decoder assembly instructions:

1. Cut out the destiny decoder along the black dashed lines. Fold into a triangle.
2. Fold the two opposite ends of the triangle together, forming a smaller triangle.
3. Open up the paper, unfolding all the folds, with the blank side up.
4. Fold one corner to the center point. Fold the opposite corner to the center.
5. Repeat with remaining two corners. You'll end up with a square.
6. Flip the paper over. Fold a corner to the center. Repeat with the opposite corner.
7. Fold over the two remaining corners. You'll end up with a smaller square.
8. Fold the square in half. Unfold, then fold in half the other way.
9. Unfold, then pull the four ends together, making a diamond-like shape. Pick up each of the four square flaps, and put your fingers inside. You will be able to move the four parts around.



Use this side to make your own destiny decoder!

Water web for kids

- **American Water Works Association (AWWA) “DrinkTap.org”:** Watch videos to learn fun facts about water at this site. drinktap.org/kids-place
- **American Water Works Association (AWWA) The Story of Drinking Water:** Test your water knowledge by playing “Water On Earth,” “Water Cycle Vocabulary” and “Meter Reading” games. drinktap.org/kids-place/the-story-of-drinking-water
- **City of Everett School Program:** Find information about our school program classroom water workshops. everettwa.gov/water
- **Project WET Water Education for Teachers:** This site provides action-oriented education to help every child understand and value water. Play “The Blue Traveler” online game at discoverwater.org/blue-traveler and go to discoverwater.org for an interactive way to learn about the role of water in our lives. For Project WET information, go to projectwet.org
- **US Environmental Protection Agency (EPA) Drinking Water & Ground Water Kids’ Stuff:** This site has resources for teachers and kids about drinking water and ground water, including games and activities sorted by grade level. epa.gov/safewater/kids/index.html
- **US Environmental Protection Agency (EPA) Learning and Teaching about the Environment:** This site has resources for students K-12 looking for ideas for homework resources and ideas for school projects. The site also includes games and quizzes. epa.gov/students
- **US Environmental Protection Agency (EPA) WaterSense Kids:** Test your water knowledge by playing the interactive “WaterSense” game. Learn simple ways to save water and why saving water is important. epa.gov/watersense/watersense-kids
- **US Geological Survey’s (USGS) Water Science School:** Learn about water with pictures, data, maps and an interactive center where you can give opinions and test your water knowledge. water.usgs.gov/edu
- **Washington Green Schools:** This site has resources and tools for all Washington K-12 schools to help students, teachers and community members learn about resource conservation and waste reduction in schools. wagreenschools.org
- **Water Use it Wisely:** Learn about water conservation by playing the “Tip Tank” game and download the free activity pages. wateruseitwisely.com/kids/games

Website addresses sometimes change. The website addresses were correct at the time of booklet printing.

Thank you.

We hope you had fun completing this booklet. You are now a water saver and you have become a champion of the water universe.

How did you like *Learning about water:* **WATER YOU KNOW?**

We welcome your comments. Send us an email at: everettpw@everettwa.gov.

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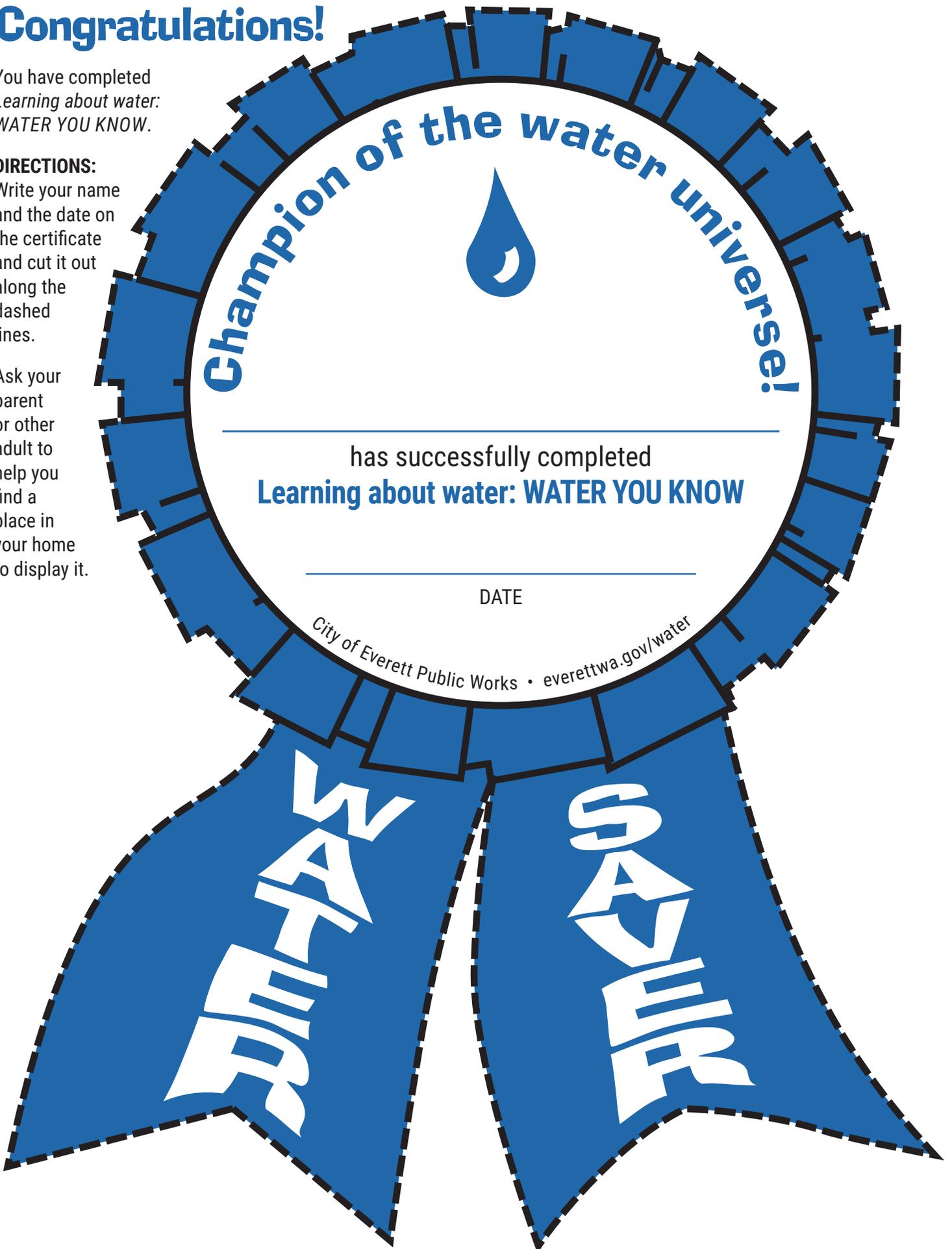
Congratulations!

You have completed
Learning about water:
WATER YOU KNOW.

DIRECTIONS:

Write your name
and the date on
the certificate
and cut it out
along the
dashed
lines.

Ask your
parent
or other
adult to
help you
find a
place in
your home
to display it.



WATER
YOU
KNOW

