GI-403 (Rev. 8/19)

WATER RECYCLES

-The Complete Story-

Poster created by:

Water Quality Protection Division
EPA Region 6

www.weat.org

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TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

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Water ReCycles: The Complete Story

Water

Water (which has a chemical formula of Dihydrogen Monoxide or H_2O) covers 71 percent of Earth's surface. Almost all of that is saltwater in our oceans. Freshwater accounts for only 3 percent of total water and more than two-thirds of it is frozen in glaciers. Liquid freshwater (groundwater, lakes, streams, rivers), which is what people use to drink, farm, clean, and use for most tasks, makes up less than 1 percent of all the water on Earth! Most of the water we need to live is groundwater (about 99 percent) so understanding the water cycle and learning that water is a limited resource is important for teachers, students, and all Texans.

ReCycle

The word "recycle" calls to mind images of paper grocery bags filled with newspapers or a collection of crushed aluminum cans, plastic containers, and glass bottles. Most of us do not connect water with recycling. Yet, the water (or hydrologic) cycle is a good example of recycling. Water recycling means reusing treated wastewater for helpful purposes such as lawn and crop watering, industrial processes, toilet flushing, and replenishing a ground water basin (referred to as ground water recharge).

The Water Cycle

In its basic form, the cycle is simple. The sun's energy converts liquid to vapor (**evaporation**). The water vapor, being lighter than air, rises in the atmosphere until the cooler temperatures turn it into tiny droplets of water (**condensation**). These droplets come together to form clouds. In the clouds, the droplets combine to form larger drops. When these drops reach a larger size, gravity pulls them back to Earth's surface (**precipitation**). Though the water cycle can be much more complex, knowing the basics will help you understand where water comes from and where it goes.

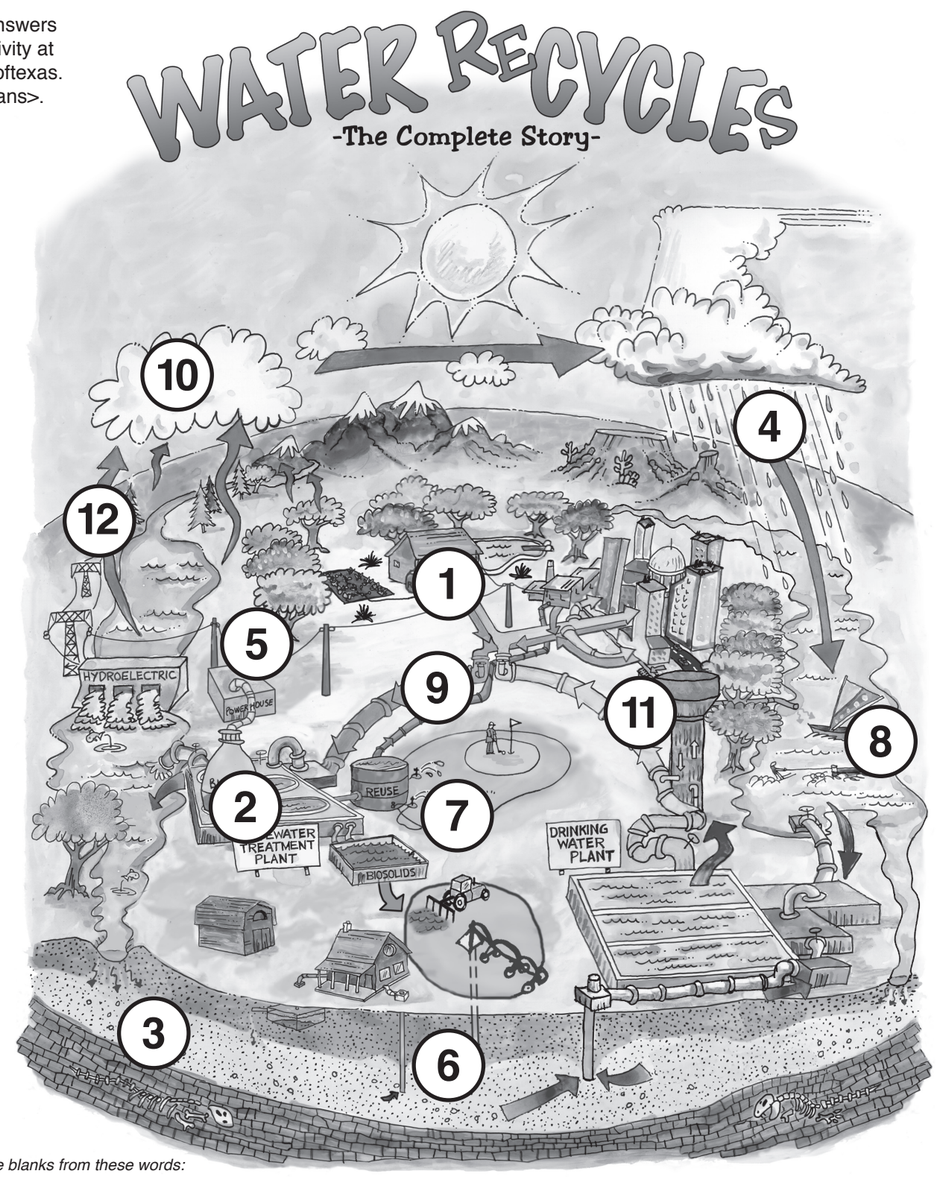
Humans and The Water Cycle

This poster, Water ReCycles, is for "learners" of all ages, both in and out of a formal classroom. Most of us learn about water and the water cycle in grade school. However, even as adults, we often have trouble recognizing and understanding the ways humans affect the natural water cycle. By including the pumps, pipes, and treatment plants (infrastructure) in this poster, you can see these "two water cycles"—natural and human-affected—and how they relate to one another. Look at the poster for examples of water recycling that Texans can do at home, such as using a rain barrel to harvest rainwater.

The poster also includes elements that show some of the complex water-related issues we face today, such as stormwater pollution and hydroelectric power generation, among others. We hope this poster encourages you to study and discuss these issues.

For more information and resources, visit <TakeCareofTexas.org>.

Find the answers for this activity at <takecareoftexas.org/water-ans>.



Fill in the blanks from these words:

sludge **precipitation** **power plant** **ground water** **reuse** **surface water** **sewage** **rain barrel** **condensation** **drinking water** **evaporation** **infiltration**

1 _____	4 _____	7 _____	10 _____
2 _____	5 _____	8 _____	11 _____
3 _____	6 _____	9 _____	12 _____

Bonus: What do the dinosaur bones represent?

How and Why Do We Recycle Water?

Unscramble the words to identify words related to water use and the environment.

Find the answers for this activity at <takecareoftexas.org/water-ans>.

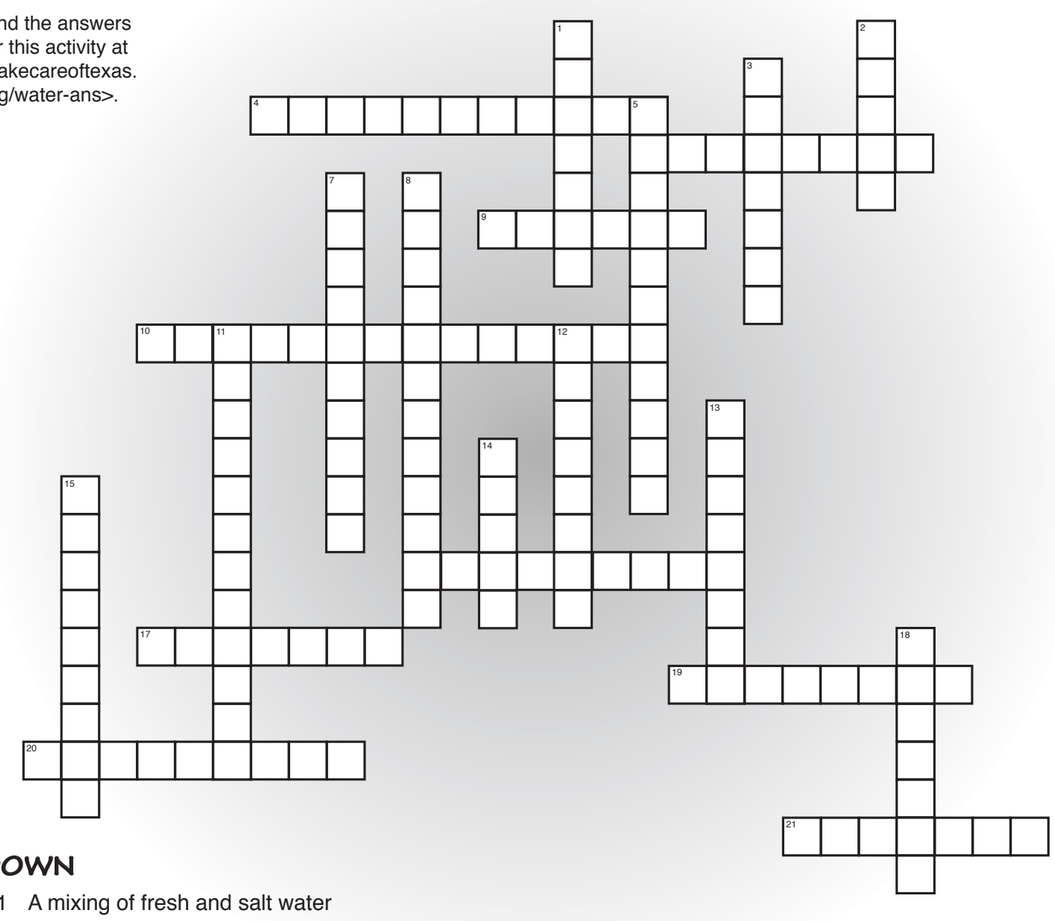
nira	4 letters	2
wson	4 letters	9
ilah	4 letters	6
ecnao	5 letters	5
aelk	4 letters	3
vreir	5 letters	4
avsihretng	10 letters	1
fqruiea	7 letters	8
eirorvesr	9 letters	15
ogf	3 letters	10
erarbl	6 letters	14
isol	4 letters	
salptn	6 letters	11
silosiobd	9 letters	
ropwe nlatp	5 letters, 5 letters	7
etneamh	7 letters	12

Use the numbered letters from above to find the answer! What letter is missing?

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
___	___	___	___	___	___	___	___	___	___	___	___	___	___	___

Water, Land Use, and Wastewater Treatment

Find the answers for this activity at <takecareoftexas.org/water-ans>.



DOWN

1 A mixing of fresh and salt water
2 Used in disinfection of water
3 Aids coagulation
5 Lawn fertilizer, oil drained from cars, septic tank overflows
7 What a rain barrel is used for
8 Erosion from logging, road construction
11 Fertilizers or manure draining into a stream
12 Numerous types of chemicals and products
13 Widely used disinfectant
14 Landscape irrigation with effluent
15 A lake containing a high concentration of dissolved nutrients
18 Water that is safe to drink

ACROSS

4 Water that remains below the land surface
6 Treated wastewater
9 Muddy water
10 Straightening and deepening of stream or river channels
16 Any natural or artificial holding area
17 Stratum of the earth composed of water layered between rock
19 The mixing or agitation of wastewater
20 Nutrient-rich, stabilized by-product used as fertilizer
21 An area that is regularly saturated by surface water

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