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- Reading Comprehension

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NAME: _____

Before You Read

How The Amount Of Fresh Water Could Change

1. Circle the word **TRUE** if the statement is TRUE **or** Circle the word **FALSE** if it is FALSE.

a) When fresh water becomes scarce, people will start using salt water.

TRUE **FALSE**

b) An aquifer is a source of surface water.

TRUE **FALSE**

c) Most liquid fresh water is in rivers.

TRUE **FALSE**

d) Some farmers use underground water to irrigate crops.

TRUE **FALSE**

e) Increase in Earth's population will make water shortages worse.

TRUE **FALSE**

f) Climate change could cause both droughts and floods.

TRUE **FALSE**

2. Use the words in the list to answer each question. Use each word only once.

underground **irrigation** **rainfall** **unsustainable** **fresh** **salt**

a) Climate change will provide people living near glaciers with more _____ water.

b) The two ways that crops are watered is by _____ or by _____.

c) Most liquid fresh water is located _____.

d) As the amount of water flowing into the ocean from rivers increases, Earth will have more_____ water.

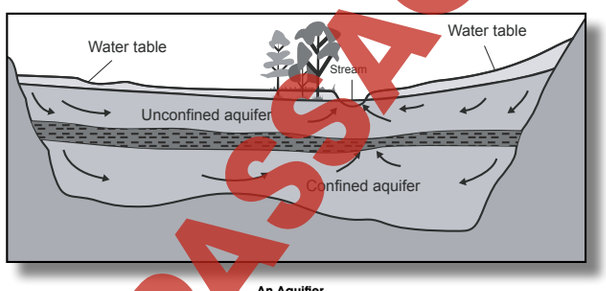
e) Pumping water out of the ground faster than it seeps in is _____ water use.

Reading Passage

NAME: _____

How The Amount Of Fresh Water Could Change

As climate changes, many people will see a change in the amount of water available to them. Remember that most people either get their fresh water from the surface or from underground.



An Aquifer

First we will look at changes in surface water. This is water in rivers, lakes, and reservoirs. This water can come from precipitation or from melting snow and ice. As the climate changes, the rainfall pattern around the world will change. Some places will get more and some will get less, but these changes are hard to predict. People living in places that get less rainfall will have to learn to deal with **droughts**. People who live in places that get more rainfall will have to learn to deal with floods.

We know that higher temperatures will cause more evaporation. This will cause an increased loss of water from lakes and reservoirs. Higher temperatures will also cause more ice and snow to melt in places like Canada and Russia. This will give people in these countries more fresh water, but these are the very places that already have more than they need.

STOP

Explain why rising temperature will require farmers to use more water to grow crops.

_____

_____

After You Read

NAME: _____

How The Amount Of Fresh Water Could Change

1. Put a check mark (✓) next to the answer that is most correct.

a) Which of these countries is *least* likely to suffer a water shortage?

- ○ **A** Canada
- ○ **B** China
- ○ **C** Mexico
- ○ **D** Iraq

b) Which kind of water is *most* likely to decrease in the near future?

- ○ **A** ocean water
- ○ **B** frozen water
- ○ **C** water vapor
- ○ **D** liquid water

2. Draw a line from each word or words on the left to its meaning on the right

1	drought	water in lakes, rivers, swamps, and reservoirs	A
2	surface fresh water	to supply water to crops	B
3	evaporation	a period with much less rainfall than usual	C
4	aquifer	water changing from liquid to gas but not boiling	D
5	irrigate	a layer of water underground	E

NAME: _____

After You Read

How The Amount Of Fresh Water Could Change

3. Answer the questions in complete sentences.

a) Explain how it is possible to cause a problem by pumping too much water from an aquifer.

_____

_____

b) Explain why the increase in world population threatens fresh water supplies.

_____

_____

Extensions & Applications

Describe three changes in the amount of fresh water that will result from the coming changes in Earth's climate. For each change, tell whether it will be easy or hard to predict how the change will affect fresh water. If it is easy to predict the change, describe the change (for example, more water, less water, etc.).

a) _____

_____

b) _____

_____

c) _____

_____

Activity Four

Build a Drip Irrigation System

If you have a home garden that you water with a hose or sprinkler, you may want to install a drip irrigation system to conserve water. This is less complicated and expensive than you might think.

You can begin by asking questions at a gardening store, plant nursery, or large hardware store. You can also see drip irrigation equipment at these places. You can get more information by searching libraries and the Internet for "drip irrigation." If you go to the sites of companies that sell drip irrigation equipment over the internet, you can see pictures of all the different parts that make up a drip system. The simplest sets of parts to set up a drip system are not very expensive.

To learn the basics in the easiest way possible, you can begin by running a drip line to just one plant or tree. After you see how this works, you can run branching lines to other parts of your garden.

If you don't have a home garden, you could study drip irrigation systems and write a report. These are some things you could include in a report on drip irrigation:

- Pictures or drawings of the different parts of a drip system with explanations of how each part works.
- Diagrams of large and small drip systems.
- Descriptions of systems that irrigate large farms, plant nurseries, and greenhouses.
- Estimates of water and money saved by systems you have visited.
- A description of automated systems that regulate the flow of water to plants.

NAME: _____

Word Search

Find all of the words in the Word Search. Words are written horizontally, vertically, diagonally, and some are even written backwards.

atmosphere	conservation	drip	fossil	greenhouse	melt	salt
berg	cycle	drought	fuel	ice	precipitation	unsustainable
climate	desalination	evaporation	gas	irrigation	runoff	vapor

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

NAME: _____

Comprehension Quiz

25

Part A

7

Circle the word **TRUE** if the statement is TRUE **or** Circle the word **FALSE** if it is FALSE.

1. The Mississippi River is fresh water.
   TRUE **FALSE**
2. Most fresh water on Earth is either liquid or gas.
   TRUE **FALSE**
3. Burning fossil fuels releases greenhouse gases.
   TRUE **FALSE**
4. An aquifer is the device that controls water flow in a drip irrigation system.
   TRUE **FALSE**
5. Melting polar ice caps will increase Africa's supply of fresh water.
   TRUE **FALSE**
6. One person in four, worldwide, does not have access to safe drinking water.
   TRUE **FALSE**
7. Desalination is another term for graywater recycling.
   TRUE **FALSE**

Part B

Put a check mark (✓) next to the answer that is most correct.

3

a) Water in the ocean is changed into water vapor in the air by:

- ○ **A** condensation.
- ○ **B** evaporation.
- ○ **C** precipitation.
- ○ **D** respiration.

b) Which of these is a greenhouse gas?

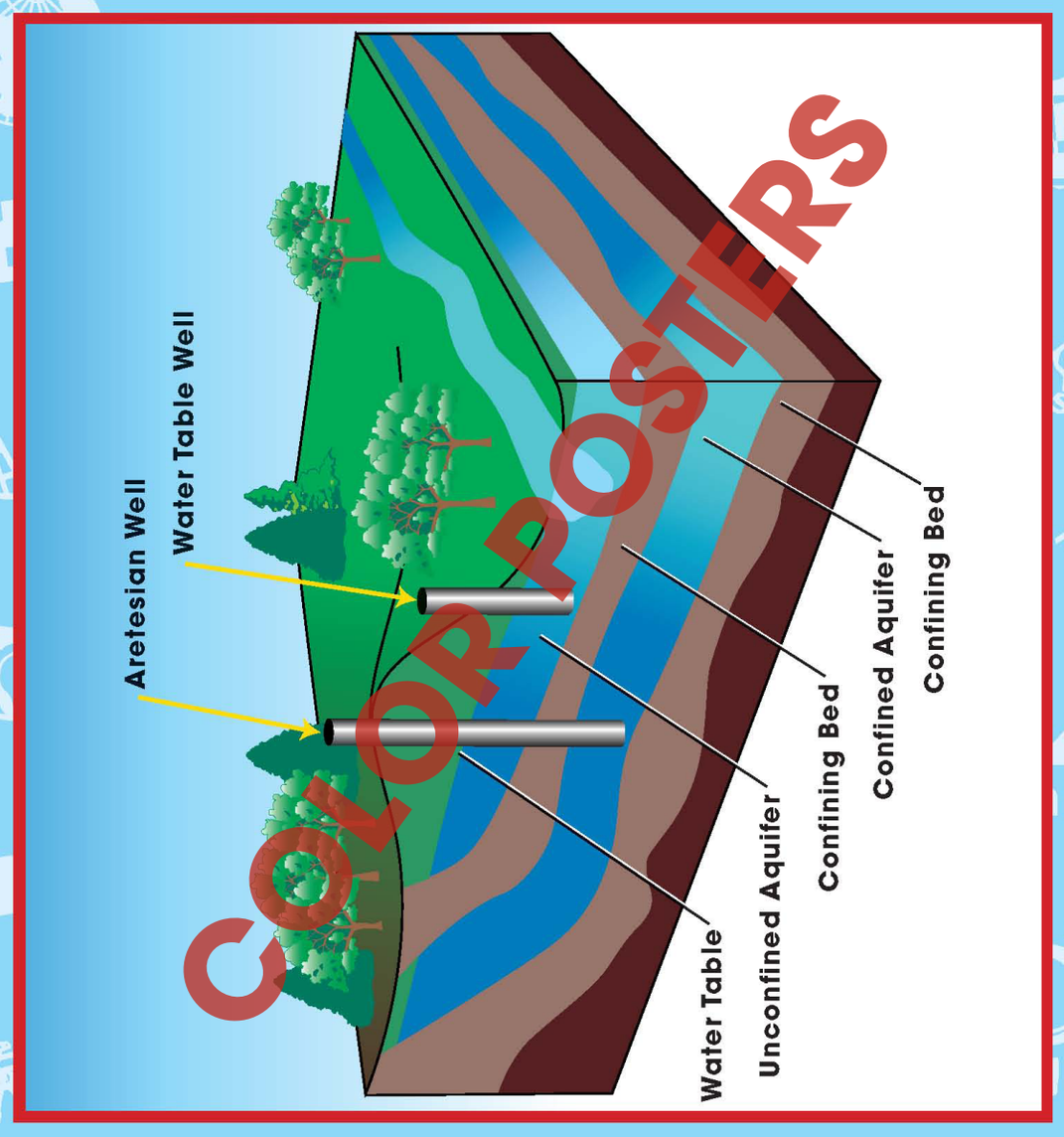
- ○ **A** nitrogen
- ○ **B** oxygen
- ○ **C** hydrogen
- ○ **D** carbon dioxide

c) Which of these continents has the most serious water shortage problem?

- ○ **A** Africa
- ○ **B** Europe
- ○ **C** North America
- ○ **D** South America

SUBTOTAL: /10

Underground Fresh Water



NAME: _____

After You Read

How The Amount Of Fresh Water Could Change

3. Answer the questions in complete sentences.

a) Explain how it is possible to cause a problem by pumping too much water from an aquifer.

_____

_____

b) Explain why the increase in world population threatens fresh water supplies.

_____

_____

_____

Extensions & Applications

Describe three changes in the amount of fresh water that will result from the coming changes in Earth's climate. For each change, tell whether it will be easy or hard to predict how the change will affect fresh water. If it is easy to predict the change, describe the change (for example, more water, less water, etc.).

a) _____

_____

b) _____

_____

c) _____

_____

EZ

3.

a) If water is pumped out of an aquifer faster than it seeps back in, the aquifer will go dry.

b) (Answers will vary.) More people will need more fresh water for all purposes.

Extensions & Applications

ers will vary:
sy to predict
th there will be less frozen water.

It is easy to predict that there will be more precipitation.

It is easy to predict that arctic regions will have more fresh water.

Precipitation patterns will change but it is hard to predict which places will get more rain and which places will get less.

It is hard to predict which places will have more fresh water and which places will have less.

Etc.

11

Evaporation, and condensation (and perhaps runoff) happened in the jar.

Evaporation happened when the jar was heated, and condensation (and perhaps runoff) happened when the jar was cooled.

The weight did not change because the water was recycled and did not leave the jar (answers will vary).

The beads of condensed water did not taste salty.

13

The temperature was higher inside the jar.

Light came in, heated the inside, and heat was trapped.

14

- Historians tend to believe water conflicts will not lead to wars.
- Some historians say water is too important to fight over.
- (Answers will vary.) The Jordan, the Nile, the Colorado etc.

15

(Answers will vary.)

16