Contents

Before You Read

NAME: _____

Where is Earth's Salt Water?

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

a) Most of Earth's salt water is in salt lakes.
TRUE **FALSE**

b) Evaporation transfers water from the oceans to the atmosphere.
TRUE **FALSE**

c) Frozen water is called "water vapor."
TRUE **FALSE**

d) Rainwater is fresh water.
TRUE **FALSE**

e) All salt lakes are connected to one of the oceans.
TRUE **FALSE**

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

a) What is the water cycle?
- ○ **A** a human-powered, ocean-going vehicle
- ○ **B** the chemical reaction that produces water
- ○ **C** a device for lifting water from a river to irrigated fields
- ○ **D** the natural process that transfers water in the global environment

b) Which ocean is farthest north?
- ○ **A** Arctic
- ○ **B** Atlantic
- ○ **C** Indian
- ○ **D** Pacific

c) Which process changes water from a gas to a liquid?
- ○ **A** condensation
- ○ **B** evaporation
- ○ **C** precipitation
- ○ **D** runoff

NAME: _____

Reading Passage

Climate Change and Salt Water


Dawes Glacier Melting

Twenty thousand years ago, The level of the ocean was 120 meters (400 feet) lower than it is today! Sea level depends on global climate, and Earth's climate is changing. One of the most important factors affecting climate is the **greenhouse effect**.

A greenhouse effect occurs wherever there is a layer of material that transmits light more readily than it transmits heat. In a greenhouse where plants are grown, the layer is glass. Sunlight passes through the glass, which warms the inside. Much of the heat produced is trapped because it cannot pass out through the glass.

For Earth the layer that **transmits** light and traps heat is a layer of gases in the atmosphere. These gases are called **greenhouse gases.** One of the most important greenhouse gases is **carbon dioxide** which is released whenever we burn **fossil fuels**, such as **coal**, **oil**, and **natural gas**. Because people have been burning a lot more fossil fuels over the past 100 years, the greenhouse effect has gotten stronger, more heat has been trapped, and Earth has gotten warmer.

Identify *three* fuels that release carbon dioxide when they are burned.

_____

_____

After You Read

NAME: _____

How the Amount of Salt Water Could Change

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

a) Which of these bodies of water is shrinking?
- ○ **A** the Aral Sea
- ○ **B** Lake Superior
- ○ **C** The Arctic Ocean
- ○ **D** the Mediterranean Sea

b) Where is the South Pole located?
- ○ **A** Iceland
- ○ **B** Antarctica
- ○ **C** Greenland
- ○ **D** The Arctic Ocean

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

1	ice sheet	a large island near the North Pole	A
2	Aral Sea	a thick layer of ice covering a large area of land	B
3	Greenland	a permanent ice field slowly moving down a mountainside	C
4	glacier	the location of most of Earth's ice	D
5	Antarctica	a salt lake in Asia	E

After You Read

NAME: _____

How the Purity of Salt Water Could Change

3. Answer the questions in complete sentences.

a) Other than the greater amount, what makes today's ocean trash more of a problem than trash thrown in the ocean 200 years ago.

b) Explain why an oil spill is more destructive to ocean habitat than a coal spill.

Extension & Applications

Spreading fertilizer on a field can lead to the death of fish in an area of the ocean. Explain the steps in the processes that lead from fertilizer to dying fish. You will need to describe at least three steps and use the words "runoff", "algae", and "oxygen."

Activity Two

Write a Report:

Write a report on the deepest spot in the ocean. Your report should answer these questions:

- Where is the deepest part of the ocean?
- How deep is it?
- What is the pressure there?
- Does anything live there?
- People have only been there once:
  - o How many people went?
  - o What did they see?
  - o What were the special features of their vessel that made the trip possible?
  - o Are there any vessels today that could go to this depth?

 NAME: _____

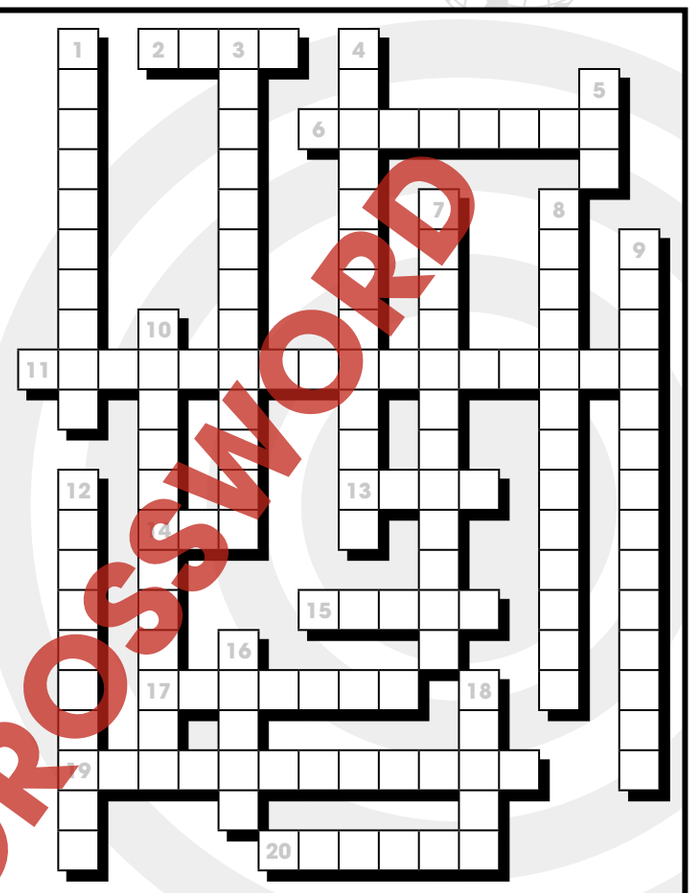
Crossword Puzzle!

Across

2. The chemical formula of sea salt.
6. A part of the ocean where fish cannot live.
11. This keeps Earth's heat from escaping into space.
13. This inland salt sea in Asia has lost 75% of its surface area.
14. Solid water
15. When water evaporates, it becomes water _____.
17. A giant ice cube floating in the ocean.
19. Saving resources by using them more carefully.
20. Oil, coal, and natural gas are _____ fuels.

Down

1. All the gases above Earth's surface make up the _____.
3. Rising global temperature is an example of this.
4. Any one of the gases that trap Earth's heat.
5. A large body of water.
7. The process before precipitation.
8. 3.5% is the _____ of salt in sea water.
9. This process cannot take place below an ocean depth of 2000 feet.
10. Removing the salt from salt water.
12. Evaporation, condensation, precipitation, runoff.
16. Sea _____ is zero altitude.
18. A low-lying tropical island.



Word List

ARAL	DEAD ZONE	LEVEL
ATMOSPHERE	DESALINATION	NaCl
ATOLL	FOSSIL	PHOTOSYNTHESIS
CLIMATE CHANGE	GREENHOUSE EFFECT	SEA
CONCENTRATION	GREENHOUSE GAS	VAPOR
CONDENSATION	ICE	WATER CYCLE
CONSERVATION	ICE BERG	

(Note: For answers of more than one word, do not put a space between the words.)

 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. All Earth's salt water is in the oceans.
TRUE **FALSE**

2. Ocean water is 71% salt.
TRUE **FALSE**

3. Water enters the ocean through runoff and leaves by evaporation.
TRUE **FALSE**

4. An increased greenhouse effect will lead to higher ocean levels.
TRUE **FALSE**

5. Most of Earth's ice is in icebergs.
TRUE **FALSE**

6. Fertilizer runoff can cause ocean dead zones.
TRUE **FALSE**

7. Materials poured down storm drains go to sewage treatment plants.
TRUE **FALSE**

Part B

3

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

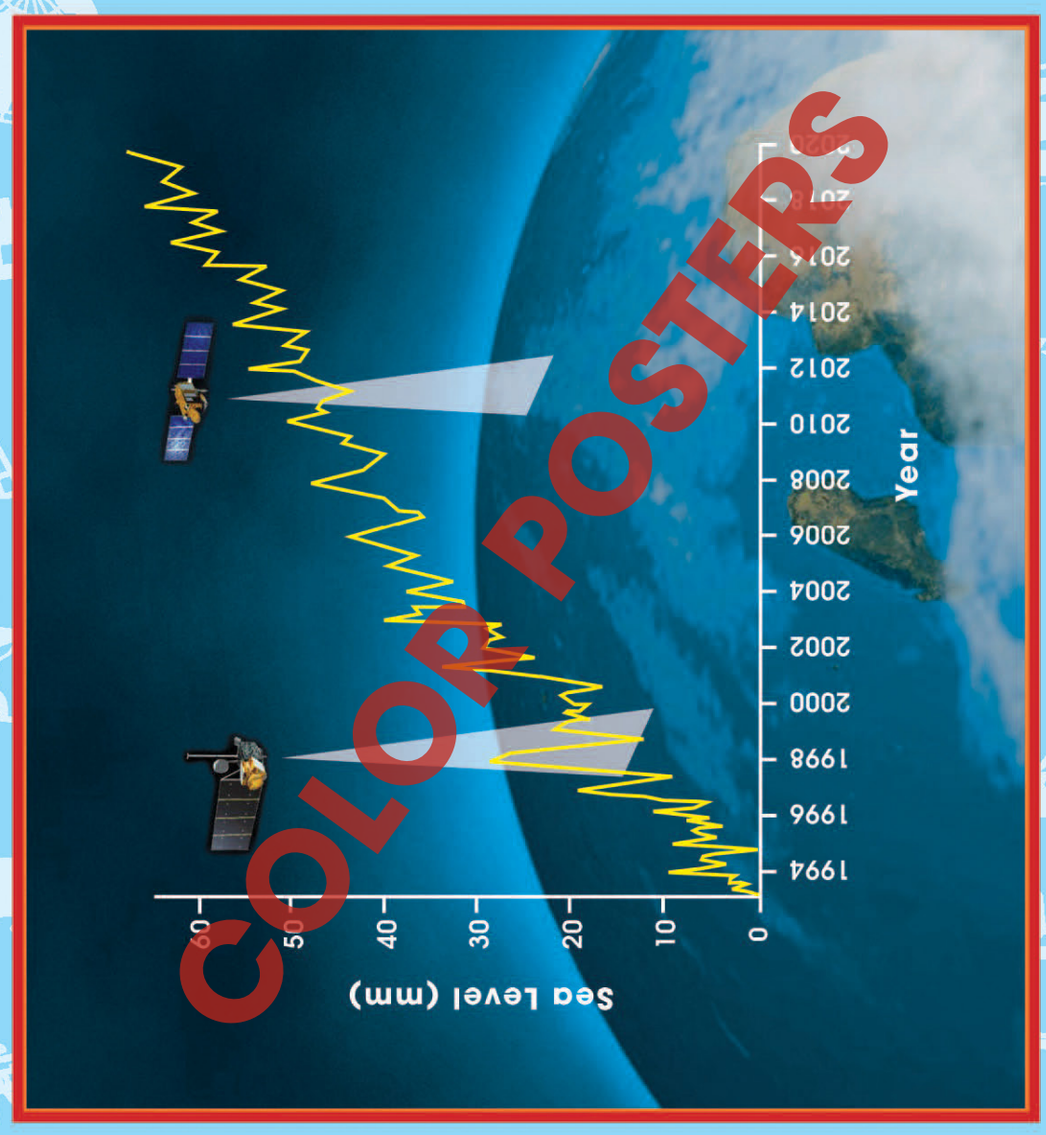
a) Which of these is a greenhouse gas?
- ○ **A** oxygen
- ○ **B** nitrogen
- ○ **C** carbon dioxide
- ○ **D** sodium chloride

b) What percent of Earth's water is salt water?
- ○ **A** 3.5%
- ○ **B** 29%
- ○ **C** 71%
- ○ **D** 97.7%

c) What problem might people living on tropical atolls face if global temperature continues to rise?
- ○ **A** drought
- ○ **B** flooding
- ○ **C** pollution
- ○ **D** tsunami

SUBTOTAL: /10

Sea Level Rise



NAME: _____

After You Read

How the Purity of Salt Water Could Change

1. Fill in each blank with a word from the list.

biodegradable	dead zone	mercury	habitat	fertilizer

a) _____ runoff from fields can create an ocean _____.

b) _____ tends to concentrate in species at the top of a food chain.

c) Wood is more _____ than plastic.

d) Oil spills cause damage to marine_____s.

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

a) If a material is biodegradable, it means

- ○ **A** it is toxic to most animal life.
- ○ **B** it is natural rather than synthetic.
- ○ **C** it serves as food for several different species.
- ○ **D** it is decomposed quickly by natural processes.

b) What is the main reason marine debris tends to collect in certain parts of the ocean?

- ○ **A** ocean tides
- ○ **B** trade routes
- ○ **C** wind patterns
- ○ **D** ocean currents

c) What do ocean dead zones lack that is needed to support fish and other marine animals?

- ○ **A** oxygen
- ○ **B** plant life
- ○ **C** nutrients
- ○ **D** carbon dioxide

EASY MARKING ANSWER KEY

1.

a) fertilizer…dead zone

b) mercury

c) biodegradable

d) habitat

2.

a) ☑ **D**

b) ☑ **D**

c) ☑ **A**

3.

a) Most of the materials thrown into the ocean 100 years ago were biodegradable.

b) Oil floats on the surface where it sticks to animals and damages habitat, whereas coal sinks to the bottom.

Extensions & Applications

Answers will vary:
The steps leading from fertilizer runoff to dying fish are as follows:

Fertilizer runs from fields and into streams that lead to the ocean.

Nutrients in fertilizer encourage the growth of marine algae.

Algae die.

Algae are decomposed by organisms that remove oxygen from the water.

Fish die from lack of oxygen.

1.

a) **TRUE**

b) **TRUE**

c) **FALSE**

d) **TRUE**

e) **FALSE**

2.

a) ☑ **C**

b) ☑ **B**

c) ☑ **D**

EZ

Higher temperature melts more ice causing sea level to rise and flood low-lying land.

1.

D

2.

a) **FALSE**

b) **TRUE**

c) **FALSE**

d) **TRUE**

e) **FALSE**