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## EASY MARKING™ ANSWER KEY .....

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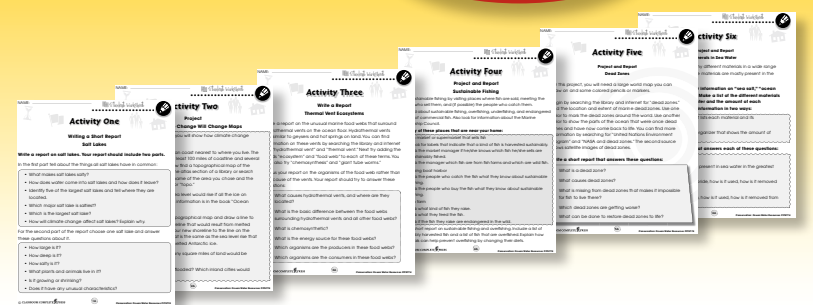
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## What is Salt Water?

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

- a) All the oceans contain salt water.  
**TRUE**      **FALSE**
- b) Some parts of the oceans are deeper than others.  
**TRUE**      **FALSE**
- c) Surfaces of the oceans are at different levels.  
**TRUE**      **FALSE**
- d) Salt in salt water is the same kind of salt people sprinkle on food.  
**TRUE**      **FALSE**
- e) Only oceans contain salt water.  
**TRUE**      **FALSE**

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

- a) Which of these is *not* the name of an ocean?

- A Arctic  
 B Indian  
 C Mediterranean  
 D Pacific

- b) Which is a typical depth of the ocean far from land.

- A 100 feet  
 B 300 feet  
 C 1 mile  
 D 3 miles

- c) Why are there no plants at the bottom of the ocean?

- A because it is too cold  
 B because no fish live there  
 C because the pressure is too great  
 D because sunlight cannot reach there



## What is Salt Water?

Of all the planets in our solar system, only Earth has **oceans**. Of course, Earth also has liquid water in lakes, rivers, and underground aquifers. The most important difference between the oceans and lakes is that **ocean** water is salty and most lakes contain **fresh water**. Oceans also hold much more water than any of the other places where water is found. In fact, oceans contain 97.5% of Earth's water and cover 71% of its surface.

**Salt water**, by definition, is any water that contains more than 1% salt by weight. All oceans are about 3.5% salt. A few lakes are even saltier than the ocean. The salt in **seawater** is mostly, but not completely, the same salt that we sprinkle from salt shakers onto our food. This kind of salt is called **sodium chloride**, which has the chemical formula **NaCl**.

How many oceans are there? Most maps give names to four or five oceans, but we could also say there is *just one* ocean. Look at a world map, and you will notice that all the oceans are connected somewhere. This is a very important characteristic of oceans, because it means that what is true of one ocean is usually true of all oceans. All oceans have the same salt **concentration**. The surface of all oceans is at the same average height. (This height is called **sea level** and is used to represent zero altitude.) If a poisonous chemical flows into the ocean from a river, that poison will eventually travel to all parts of the ocean.

Why do all oceans have about the same concentration of salt?



\_\_\_\_\_

\_\_\_\_\_



## What is Salt Water?

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

- a) Which of these is the name of an ocean?

- A Caribbean  
 B Caspian  
 C Indian  
 D Superior

- b) What is the percentage of salt in ocean water?

- A 1.0 %  
 B 3.5 %  
 C 35 %  
 D 70 %

- c) What is the chemical formula of most of the salt in the oceans?

- A  $C_6H_{12}O_6$   
 B  $CO_2$   
 C  $H_2O$   
 D  $NaCl$

2. Use one of the numbers below to complete each sentence. Use each number once.

2.3      3.5      71      97.5      2000

- a) About \_\_\_\_\_ % of Earth's surface is covered by water.
- b) Only the upper \_\_\_\_\_ feet of ocean water receives enough sunlight to support photosynthesis.
- c) The oceans contain \_\_\_\_\_ % of Earth's water.
- d) Ocean water is about \_\_\_\_\_ % salt, by weight.
- e) The average depth of the oceans is \_\_\_\_\_ miles.

## What is Salt Water?

3. Answer the questions in complete sentences.

- a) Explain why all the oceans have the same water level.

\_\_\_\_\_

\_\_\_\_\_

- b) Explain why it is more difficult to explore and map the ocean floor than almost any place on land.

\_\_\_\_\_

\_\_\_\_\_

### Extension & Applications

An unlabeled map of the world is shown below.



Use the map to answer these questions.

- a) Label the Atlantic Ocean, Pacific Ocean, Arctic Ocean, and Indian Ocean by writing the names on the map.
- b) When European sailors first explored the world in ships, the Panama and Suez canals had not been built, and there was too much ice in the Arctic Ocean to sail across it. Draw lines on the map to show **two** ocean routes explorers could have taken to get from England to China.



# Activity One

## Design a Game

Make a board game from a world map. The game will be a contest to see which player can sail around the world first. This is what you will need:

- A large world map. This should be the kind that does not distort the shapes of oceans and continents.
- Objects to represent ships.
- A pair of dice.
- A strip of thin cardboard or thick paper.
- Blank 3 X 5 cards.

This is what you do to prepare the game:

- Find the scale of miles on the map and make a ruler with the strip of cardboard. Use the scale of miles to mark the ruler off in 100s of miles, up to 1200 miles.
- Write these things on the 3 X 5 cards

- o You caused an oil spill. Lose one turn. (on two cards)
- o Free pass through the Panama Canal (on one card—this is the only way you can use the canal.)
- o Free pass through the Suez Canal (on one card—this is the only way you can use the canal.)
- o Arctic sea ice melts. Take a shortcut through the Arctic Ocean. (on one card)
- o You were caught dumping trash in ocean. Go back 1000 miles to pick it up. (on one card)
- o You hit an ice berg. Go to nearest land for repairs. (on two cards)

To play:

- Choose a starting point at a coastal city.
- Shuffle the cards and place them upside down.
- Roll the dice to see who goes first.
- Each turn, roll the dice and move your ship the number of hundreds of miles shown on the dice. (for example, move 700 miles if you roll a 7) Use the ruler you made to measure distance.
- If you roll a double, take a card from the stack. If it is a free pass, keep it until you need it. After you use it, return it to the bottom of the stack. If it is a penalty, you do what it says right away and return the card to the bottom of the stack.
- Play continues until one player's ship circles the globe and returns to the starting point.



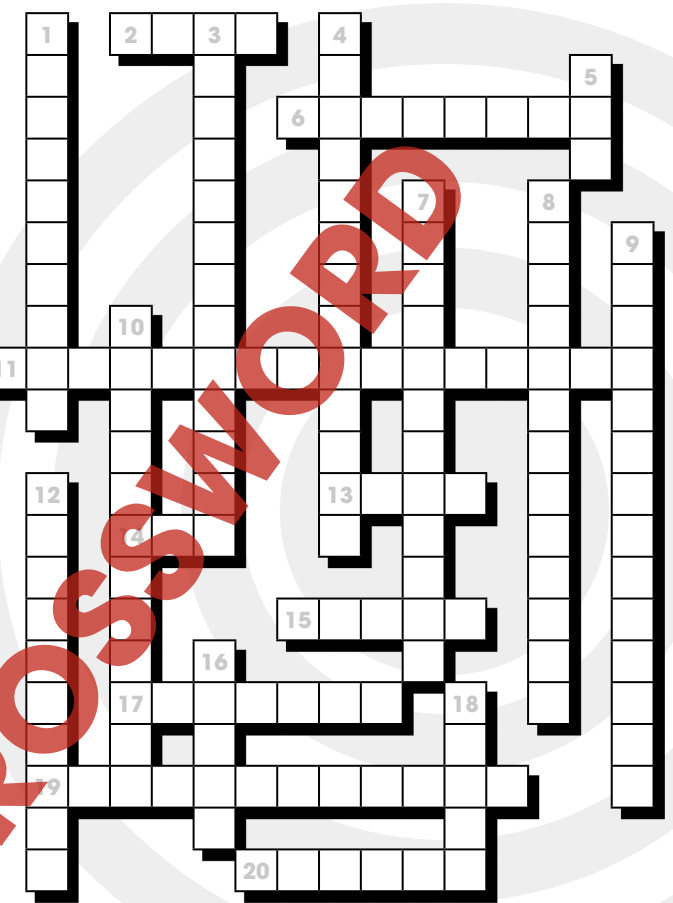
# Crossword Puzzle!

### Across

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

### Down

- All the gases above Earth's surface make up the \_\_\_\_\_.
- Rising global temperature is an example of this.
- Any one of the gases that trap Earth's heat.
- A large body of water.
- The process before precipitation.
- 3.5% is the \_\_\_\_\_ of salt in sea water.
- This process cannot take place below an ocean depth of 2000 feet.
- Removing the salt from salt water.
- Evaporation, condensation, precipitation, runoff.
- Sea \_\_\_\_\_ is zero altitude.
- 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.)



# Comprehension Quiz

### Part A

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

- All Earth's salt water is in the oceans.  
**TRUE**      **FALSE**
- Ocean water is 71% salt.  
**TRUE**      **FALSE**
- Water enters the ocean through runoff and leaves by evaporation.  
**TRUE**      **FALSE**
- An increased greenhouse effect will lead to higher ocean levels.  
**TRUE**      **FALSE**
- Most of Earth's ice is in icebergs.  
**TRUE**      **FALSE**
- Fertilizer runoff can cause ocean dead zones.  
**TRUE**      **FALSE**
- Materials poured down storm drains go to sewage treatment plants.  
**TRUE**      **FALSE**

### Part B

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

- Which of these is a greenhouse gas?  
 A oxygen  
 B nitrogen  
 C carbon dioxide  
 D sodium chloride
- What percent of Earth's water is salt water?  
 A 3.5%  
 B 29%  
 C 71%  
 D 97.7%
- What problem might people living on tropical atolls face if global temperature continues to rise?  
 A drought  
 B flooding  
 C pollution  
 D tsunami

# Chemical Composition of Seawater



NAME: \_\_\_\_\_

After You Read 



## What is Salt Water?

### 3. Answer the questions in complete sentences.

a) Explain why all the oceans have the same water level.

\_\_\_\_\_

\_\_\_\_\_

b) Explain why it is more difficult to explore and map the ocean floor than almost any place on land.

\_\_\_\_\_

\_\_\_\_\_

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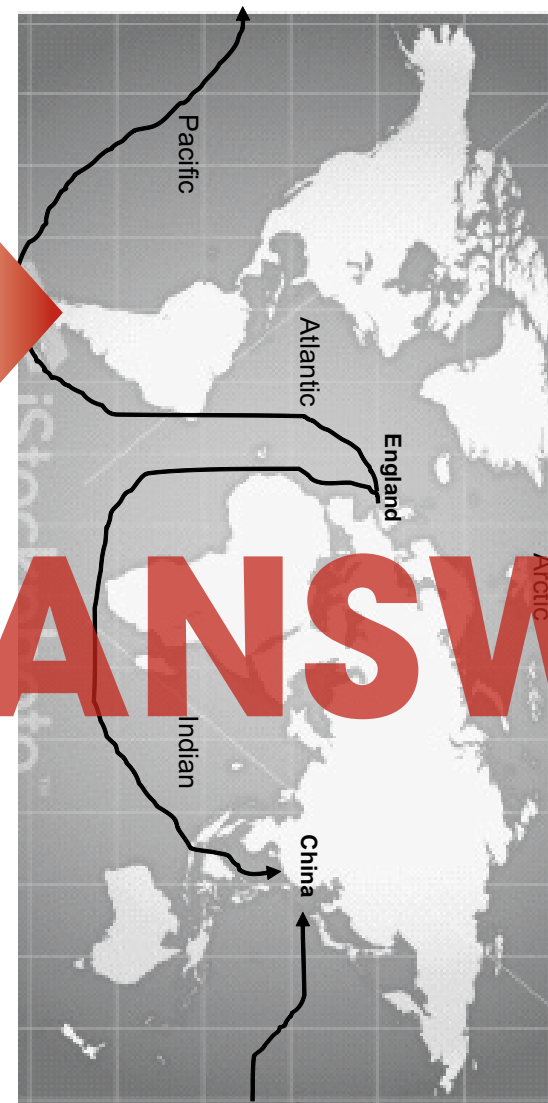
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3.

a) All the oceans are connected.

b) The pressure is very great.

### Extensions & Applications



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### Activity Two

- Challenger Deep in the Mariana Trench
- 11,000 meters
- 1,095 as great as at the surface
- Yes—flat fish, sea worms
- Two
- Ooze, flatfish, sea worms, shrimp
- Spherical steel cabin, self-propelled, gasoline-filled float, iron shot ballast
- There are currently no vessels capable of carrying people to the Challenger Deep.

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### Activity Three

- Ocean, 3.5%; Great Salt Lake, about 14% (varies greatly); Dead Sea, 30%
- It would be easier to float in all these bodies of water than in fresh water. It would be difficult to sink in the Great Salt Lake or the Dead Sea.

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### Activity Four

- To nearly all parts of the ocean
- They were not biodegradable.
- The packaging decomposed in sea water.
- Yes. One of the largest caused Nike shoes to wash up on beaches all over the world.
- The paths of the toys gave scientists a more accurate idea of the paths followed by ocean currents.

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EASY MARKING ANSWER KEY