



## TEACHER GUIDE

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## STUDENT HANDOUTS

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## EASY MARKING™ ANSWER KEY .....

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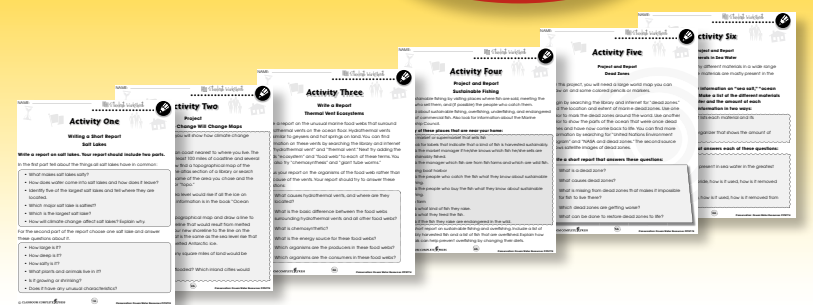
## MINI POSTERS .....

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**FREE!**

- Go to our website: [www.classroomcompletepress.com/bonus](http://www.classroomcompletepress.com/bonus)
- Enter item CC5774 – Conservation: Ocean Water Resources
- Enter pass code CC5774D for Activity Pages





## Conservation: What We Can Do

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

- a) Increasing concentration of greenhouse gases in the atmosphere are a major cause of:
- A acid rain
  - B skin cancer
  - C climate change
  - D falling sea level
- b) Cod is a fish that was once part of many people's diet in North America. Why do few people eat cod today?
- A Cod were overfished.
  - B Cod contains high levels of mercury.
  - C Chicken became more popular than fish.
  - D Polar Bears have reduced cod populations.
- c) Most marine debris is some form of:
- A paper
  - B plastic
  - C rubber
  - D wood

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

- a) Nitrogen is a greenhouse gas.  
**TRUE FALSE**
- b) Oil poured down a storm drain is likely to end up in the ocean.  
**TRUE FALSE**
- c) Some species of fish are being caught at a sustainable rate.  
**TRUE FALSE**
- d) An ocean dead zone is an area where all the fish have been caught.  
**TRUE FALSE**
- e) Human population has leveled off.  
**TRUE FALSE**



## Conservation: What We Can Do

**T**hree problems threaten saltwater resources: climate change, pollution, and overfishing. There are two ways to approach these problems: Governments can make laws that regulate how people treat the ocean and atmosphere, and individuals can make personal choices that help protect the ocean and atmosphere.

Climate change is related to an increased greenhouse effect which is caused by an increase in the atmospheric concentration of greenhouse gases. An important greenhouse gas that people have some control over is carbon dioxide. This is increasing because of the great increase in the use of fossil fuels in the 20th and 21st Centuries.

In 1997, representatives of almost 200 countries met in Kyoto, Japan to create a plan to reduce greenhouse gas emissions. One goal of the plan was to reduce greenhouse gas emissions to a level that is 5% lower than it was in 1990. It is not clear how successful this plan was in reducing global climate change, but it is certain there will be more such plans in the future. Whatever the success of such plans turns out to be, the effect will be very gradual. Even if everyone stopped using fossil fuels tomorrow, climate would continue to change, and polar ice would continue to melt into the oceans for years to come.

Individuals can help by using less energy and by using alternative sources of energy. Traveling by almost any other means than by car reduces greenhouse emissions. Choosing appliances, light bulbs, and vehicles that are energy efficient also helps.

Identify *two* problems threatening ocean water resources.



\_\_\_\_\_

\_\_\_\_\_



## Conservation: What We Can Do

1. Fill in each blank with a word or group of words from the list. Use each word only once. One word will be left over.

climate change      overfishing      greenhouse gas  
dead zone      plastic      storm drain      sustainable

- a) Most trash floating in the ocean is some form of \_\_\_\_\_.
- b) Releasing \_\_\_\_\_es into the atmosphere are a major cause of \_\_\_\_\_.
- c) Fertilizer runoff from agricultural fields can cause a part of an ocean to become a \_\_\_\_\_.
- d) Catching fish at the same rate they reproduce is \_\_\_\_\_ harvesting.
- e) Toxic waste dumped in \_\_\_\_\_s is likely to end up in the ocean.

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

- a) Populations of many species of fish have been reduced by overfishing.  
**TRUE FALSE**
- b) In 1997 representatives of nations met in Kyoto, Japan to regulate fishing.  
**TRUE FALSE**
- c) Using energy-efficient appliances can help reduce greenhouse gas emissions.  
**TRUE FALSE**
- d) No laws control what ships at sea can dump into the ocean.  
**TRUE FALSE**
- e) The ocean is so large that pollution has little effect on it.  
**TRUE FALSE**

## Conservation: What We Can Do

3. Answer the questions in complete sentences.

- a) What is the fastest way to increase the population of a fish species that has been greatly overfished?
- \_\_\_\_\_
- \_\_\_\_\_
- b) What is the "Great Pacific Garbage Patch"?
- \_\_\_\_\_
- \_\_\_\_\_

### Extensions & Applications

Use the graphic organizer to show how partial or complete solutions can be found to the problems caused by the three ocean changes listed. Describe one solution in each empty box.

Change in the Ocean	Describe Something Governments Could Do That Would Help.	Describe Something an Individual Could Do That Would Help.
Rising Sea Level		
Marine Pollution		
Declining Fish Populations		



# Activity Three

## Making Salt Water

In this project you will make salt solutions that have the same percent salt as the ocean and two salt lakes. This is what you will need:

- A measuring cup
- A scale or balance
- Some objects that just barely sink in fresh water, like an egg

This is what you do:

- Find the percent salt content in the ocean, the Great Salt Lake, and the Dead Sea.
- Prepare salt solutions that are the same concentration as each of these bodies of water. (remember: 1 milliliter of water has a mass of 1 gram.)
- See which objects will float in which solutions.
- Answer the question: What would it feel like to swim in each of these bodies of water?

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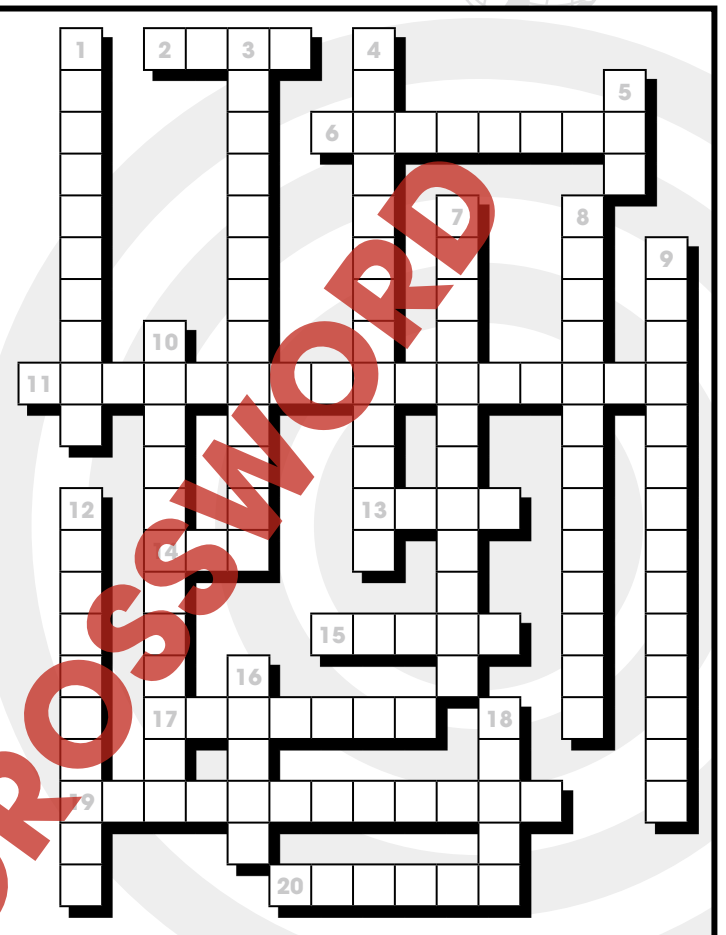
# Crossword Puzzle!

### 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

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### 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**

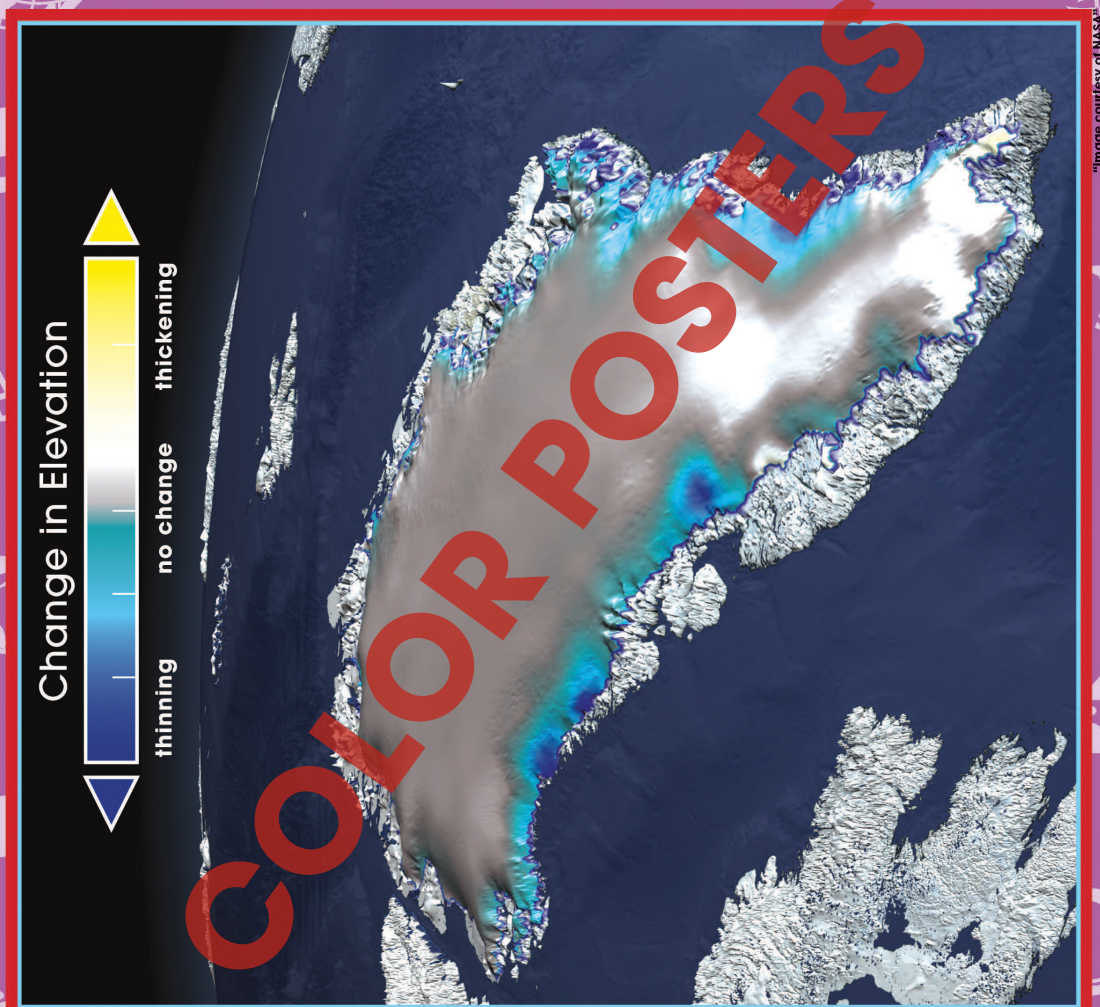
### Part B

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

# Greenland

(The melting ice sheet)



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

After You Read 



# Conservation: What We Can Do

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

a) What is the fastest way to increase the population of a fish species that has been greatly overfished?

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b) What is the "Great Pacific Garbage Patch"?

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### Extensions & Applications

Use the graphic organizer to show how partial or complete solutions can be found to the problems caused by the three ocean changes listed. Describe one solution in each empty box.

Change in the Ocean	Describe Something Governments Could Do That Would Help.	Describe Something an Individual Could Do That Would Help.
Rising Sea Level		
Marine Pollution		
Declining Fish Populations		

### 3.

a) The fastest way to increase a fish population is to catch the fish at a lower rate than they reproduce (or to underfish the species).

b) The Great Pacific Garbage Patch is a place in the north Pacific Ocean where current patterns cause floating trash to collect.

### Extensions & Applications

Answers will vary:

Change in the Ocean	Describe Something Governments Could Do That Would Help.	Describe Something an Individual Could Do That Would Help.
Rising Sea Level	Regulate greenhouse gas emissions Support development of alternate energy sources	Use cars less for transportation Use energy efficient appliances
Marine Pollution	Regulate disposal of trash by ships Regulate agricultural runoff	Do not dispose of oil or toxins in storm drains Carefully dispose of non-biodegradable carefully
Declining Fish Populations	Limit catch of declining fish populations Require underfishing of severely endangered fish species	Buy only sustainably harvested fish Buy farm-raised fish

### 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