



## EARTH'S CHANGING CLIMATE

# Oceans and Climate Change

In *Oceans and Climate Change*, learn how climate change is causing higher water temperatures, chemical changes to the oceans, and sea level rise.

### What did you learn?

#### QUESTIONS

1. What is causing coral bleaching?
  - a. Rising sea levels
  - b. Warming ocean water temperatures
  - c. Cooling ocean water temperatures
  - d. Bleach being poured into ocean waters
2. Which of the following is NOT a kind of ice that exists on land?
  - a. Glacier
  - b. Ice cap
  - c. Ice sheet
  - d. Iceberg
3. Since the 1800's, the acid level of the oceans has increased by about \_\_\_\_.
  - a. One-fifth
  - b. One-quarter
  - c. One-third
  - d. Half
4. What is an ocean "dead zone"?
  - a. An area of the ocean that has too many sharks
  - b. An area of the ocean where boats are not allowed to go
  - c. An area of the ocean that is too low in oxygen
  - d. An area of the ocean that is controlled by pirates
5. Melting sea ice does not raise the sea level. Can you explain why?
6. What is the name of the acid produced when carbon dioxide dissolves in sea water?

#### TRUE OR FALSE?

- |                                                                                         |                                                                                             |
|-----------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|
| _____ 1. Earth's oceans have absorbed almost all of the extra heat from global warming. | _____ 4. Shallow ocean currents carry cold polar water toward the equator.                  |
| _____ 2. Global warming is causing puffin populations in Iceland to rise.               | _____ 5. An El Niño event happens every other year.                                         |
| _____ 3. The last time Earth's land had no ice was during the Holocene Epoch.           | _____ 6. Ocean pollution and overfishing worsen the effects of global warming in the ocean. |



## ANSWERS

- 1. b. Warming ocean water temperatures.** On page 8, we learn that rising water temperatures in the ocean lead to coral bleaching.
- 2. d. Iceberg.** On page 14, we learn that "Much of Earth's fresh water is contained in ice on land in the form of glaciers, ice sheets, and ice caps."
- 3. c. One-third.** On page 32, we learn that "Since the 1800's, the acid level of the ocean has increased by about one-third."
- 4. c. An area of the ocean that is too low in oxygen.** On page 42, we learn that an ocean "dead zone" is a region of the ocean that is low in oxygen, an element that most living things need to survive.
- 5.** On page 18, we learn that "Floating ice already adds to the volume of the water it is in, before it melts."
- 6.** On page 28, we learn that carbonic acid is produced when carbon dioxide dissolves in sea water.

## TRUE OR FALSE? ANSWERS

- 1. True.** On page 6, we learn that "With global warming, Earth's atmosphere has grown steadily warmer. The oceans absorb almost all of this extra heat." So, the correct answer is True.
- 2. False.** On page 10, we learn that "Warmer temperatures caused by climate change are causing puffin and other seabird populations throughout the North Atlantic to shrink." So, the correct answer is False.
- 3. False.** On page 26, we learn that the last time Earth's lands had no ice was during the Eocene Epoch. So, the correct answer is False.
- 4. False.** On page 34, we learn that shallow currents carry warm water away from the equator. So, the correct answer is False.
- 5. False.** On page 34, we learn that an El Niño event happens about every 2 to 7 years. So, the correct answer is False.
- 6. True.** On page 40, we learn that ocean pollution and overfishing worsen the effects of global warming in the ocean. So, the correct answer is True.