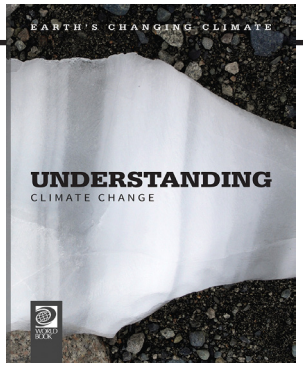

EARTH'S CHANGING CLIMATE

Understanding Climate Change

In *Understanding Climate Change,* learn how the climate is changing, how scientists study that change, and why most of them think human activities are causing it.

What did you learn?

QUESTIONS

1. In what year did scientists begin to track carbon dioxide levels at the Mauna Loa Observatory in Hawaii?
   a. 1940
   b. 1958
   c. 1973
   d. 1995

2. Which of the following is NOT used to study the history of Earth's climate?
   a. Fossils
   b. Ice cores
   c. Rain puddles
   d. Tree rings

3. Which of the following is NOT a factor that is used in climate models?
   a. The brightness of the sun
   b. The amount of carbon dioxide in the atmosphere
   c. The amount of sea ice in the ocean
   d. The moon's orbit

4. What is the name of the body that the United Nations created to investigate climate-change research?
   a. The Inclined Plane of Climate Change
   b. The Intergovernmental Panel on Climate Change
   c. The Internal Panel on Climate Change
   d. The International Publishers of Climate Change

5. Why is the trapping of heat in the atmosphere called the *greenhouse effect*?

6. How is global warming leading to more frequent and severe wildfires?

TRUE OR FALSE?

_____ 1. One molecule of carbon dioxide is made up of one carbon atom and two osmium atoms.

_____ 2. Some of the carbon dioxide in Earth's atmosphere comes from volcanic eruptions.

_____ 3. The oldest ice-core samples are about 50,000 years old.

_____ 4. The global average temperature rose by over 1 Fahrenheit degree (0.6 Celsius degree) between the years 1900 and 2000.

_____ 5. Global warming and climate change are exactly the same thing.

_____ 6. The "snowball Earth" hypothesis is the idea that global warming can be solved if everyone throws snowballs as high as they can into the air.

ANSWERS

1. **b. 1958.** On page 4, we learn that "In 1958, scientists led by Charles Keeling at the Mauna Loa Observatory in Hawaii began tracking levels of a gas called carbon dioxide in Earth's atmosphere."

2. **c. Rain puddles.** On page 24, we learn that scientists use ice cores, tree rings, and fossils to study the history of Earth's climate.

3. **d. The moon's orbit.** On page 38, we learn that "To create a climate model, scientists enter in all kinds of data, such as the brightness of the sun, the makeup of the atmosphere (including the amount of CO_2), and amount of sea ice, and how those data might be expected to change each year."

4. **b. The Intergovernmental Panel on Climate Change.** On page 41, we learn that "In 1988, the United Nations created the Intergovernmental Panel on Climate Change (IPCC) to investigate climate-change research being published and find its main points."

5. On page 8, we learn that such gases as carbon dioxide in the atmosphere absorb the heat that the land and ocean emit and hold it close to Earth's surface. We learn that "This trapping of heat is called the greenhouse effect, because the gases involved act somewhat like the windows of a greenhouse. In a greenhouse, windows let sunlight in. But they stop heat from escaping, creating a warm place for growing plants."

6. On page 32, we learn that "... because of global warming, forests and grasslands are having more hot and dry weather. So the time in which wildfires can start is getting longer, and there are more dry bushes, grasses, and leaves to fuel them."

TRUE OR FALSE? ANSWERS

1. **False.** On page 6, we learn that one carbon dioxide molecule is made up of one carbon atom and two oxygen atoms. So, the correct answer is False.

2. **True.** On page 12, we learn that "Some carbon dioxide is naturally present in Earth's atmosphere. Much of this CO_2 comes from volcanic eruptions." So, the correct answer is True.

3. **False.** On page 18, we learn that ice-core samples go back to about 800,000 years ago. So, the correct answer is False.

4. **True.** On page 20, we learn that the global average temperature rose by over 1 degree Fahrenheit (0.6 Celsius degree) between the years 1900 and 2000. So, the correct answer is True.

5. **False.** On page 23, we learn that global warming and climate change are closely linked but different ideas. While global warming is the recent, rapid increase in the temperature of the Earth's surface, climate change has happened throughout Earth's history and includes changes in temperature, rain- and snowfall, and severe weather frequency. So, the correct answer is False.

6. **False.** On page 27, we learn that the "snowball Earth" hypothesis is the hypothesis that between 750 million and 600 million years ago, Earth's climate grew so cold that the planet's surface nearly or completely froze several times. So, the correct answer is False.