Melting Ice Sheets

An ice sheet is a thick layer of ice that covers a large area for an extended period of time. During the last glacial period, most of the earth was covered by ice sheets. Today, there are only two ice sheets in the world. One is the Antarctic ice sheet, and the other is the Greenland ice sheet. Ice sheets form as layers of snow accumulate over time. Most of the freshwater available on the earth is trapped in these ice sheets.

The Antarctic ice sheet is up to 3 miles deep. It covers nearly 5.4 million square miles. That's almost the entire Antarctic continent. If all the water in this ice sheet melted, it would raise the sea level by 200 feet. The Greenland ice sheet is much smaller than the Antarctic one. It covers 656,000 square miles.

Stream of melting water in Greenland's ice sheet

These ice sheets are shrinking as they melt more quickly than snow can accumulate. Many scientists believe that global warming is playing a role in the melting of the ice sheets. Global warming is the increase in the world's average temperature. Most scientists believe that the global warming the earth is now experiencing is caused in large part by human activity. Humans are releasing gases into the air that trap heat in the atmosphere. One major way they are doing this is by burning fossil fuels.

Scientists are working hard to learn more about how and why these ice sheets are melting. The melting ice sheets can have big effects on the planet. As more water melts and enters the ocean, the sea level rises. The rising water could cover cities that sit near the coast. These cities include New York City and New Orleans, Louisiana. One other effect of the melting ice sheets is that the ocean water will become less salty as it mixes with fresh water. This could disrupt ocean ecosystems that rely on certain levels of seawater to survive.

Name: _____ **Date:** _____

1. What is an ice sheet?

A. a thick layer of ice that covers a large area for short period of time

B. a thin layer of ice that covers a small area for a short period of time

C. a thick layer of ice that covers a large area for an extended period of time

D. the process that leads to ice layers melting into the ocean

2. The text describes possible effects of ice sheets melting. What is one of these effects?

A. Ocean water will become more salty.

B. Ocean ecosystems will become healthier for sea animals.

C. The average temperature of the Earth will decrease.

D. Cities that sit near the coast may be covered in water.

3. Melting ice sheets could negatively impact our oceans.

What information from the text best supports this statement?

A. Melting ice sheets may cause oceans to become less salty which could disrupt their ecosystems.

B. Cities like New York City and New Orleans may become covered in water as the ice sheets melt.

C. Ice sheets form as layers of snow accumulate over time.

D. If all the water in the Antarctic ice sheet melted, it would raise the sea level by 200 feet.

4. During the last glacial period, most of the Earth was covered by ice sheets.

Based on information in the text, how has the average temperature of the Earth probably changed since this period?

A. It has gotten colder.

B. It has gotten warmer.

C. It has gotten colder then warmer.

D. It has gotten warmer then colder.

5. What is the main idea of this text?

A. The Greenland ice sheet covers 656,000 square miles but it is much smaller than the Antarctic ice sheet.

B. The melting of the world's ice sheets may be caused in part by global warming and could change our oceans and coastal cities.

C. The increase in the world's average temperature which the Earth is currently experiencing may be caused in large part by human activity.

D. Today, most of the freshwater available on Earth is trapped in the Antarctic and Greenland ice sheets.

6. Read the following sentence from the text.

"Global warming is the increase in the world's average temperature."

Based on this sentence, what does the word "global" mean?

A. having to do with only part of the Earth

B. having to do with just one continent

C. having to do with just one country

D. having to do with the whole Earth

7. Choose the answer that best completes this sentence.

The Antarctic and Greenland ice sheets are melting more quickly than snow can accumulate. _____, the ice sheets are shrinking.

A. As a result

B. However

C. On the other hand

D. Namely

8. What do many scientists believe is playing a role in the melting of the Earth's ice sheets?

9. As the ice sheets melt and more water enters the ocean, the sea level rises. How does this threaten cities sitting on the coast?

10. Based on information in the text, explain how humans may be able to help protect our oceans and coastal cities.