

GLOSSARY

GLACIER = A large mass of ice having its genesis on land and represents a multiyear surplus of snowfall over snowmelt.

ICEBERG = Floating peaked mass of ice at sea.

GLACIOLOGIST = Scientists who study glaciers.

SURGING GLACIER = A glacier which may suddenly advance several miles in a few months.

CONTINENTAL GLACIER = A large ice sheet that completely covers a large section of a continent, covering mountains and plains in an unbroken expanse.

ALPINE GLACIER = A glacier confined to a stream valley. Usually fed from a cirque. Also called valley glacier or mountain glacier.

"THE LITTLE ICE AGE" = The cool climactic period between about the mid-1500's and the late 1800's.

PLEISTOCENE = Period that geologists call "the Ice Age".

MILANKOVITCH THEORY = Known astronomical variations in the orbital elements of the earth triggered global climactic changes and lead to repeated glaciations.

QUIZ

- 1) At the present time, perennial ice covers this percentage of the earth

A) 50%	C) 10%
B) 25%	D) 2%
- 2) The only continent that does not have any glacial ice is:

A) Antarctica	C) Greenland
B) South America	D) Australia
- 3) Glaciers can pose a danger to ocean transportation by its:

A) Cooling ocean water	C) Lowering ocean levels
B) Icebergs	D) Meltwater
- 4) Glaciers and ice sheets once covered all these areas except:

A) Canada	C) Greenland
B) The Southwest USA	D) New England
- 5) Which of the following is not a prominent theory of events that have triggered global climactic changes:

A) Known astronomical variations in the orbital elements of the earth.	B) Changes in energy output of the sun.
C) Decrease in volcanic activity.	D) Increase in volcanic activity.
- 6) The two largest ice sheets in the world are:

A) Iceland & Greenland	C) In North America
B) Antarctica & Iceland	D) Antarctica & Greenland
- 7) If the major ice sheets were to melt, the world's oceans would:

A) Stay the same	B) Fall by 300 feet
C) Rise by 300 feet	D) Rise only one inch
- 8) The cool climactic period between about the mid-1500's to the late 1800's is known as:

A) "The Little Ice Age"	B) "The Grand Ice Age"
C) "The Milankovitch Event"	D) "The Great Ice Age"
- 9) Great volumes of particulate matter hurled into the atmosphere by volcanoes

A) Reduce the surface temperature of the earth	B) Raise the surface temperature of the earth
C) Raise the air temperature globally	D) Raise agricultural production
- 10) The Ice Age over North America and Europe

A) Lasted 15,000 years	B) Lasted 150,000 years
C) Lasted 1,000,000 years	D) Lasted 3,000,000 years

TEACHER'S ACTIVITIES:

Pre-Viewing Activities:

1. Discuss the idea that some solids can move of their own weight. If "Silly Putty" is available, show how a solid form can "flow". Use cold molasses as another example.
2. Explain how ice covers many parts of the earth (arctic, antarctic, Greenland). Explain how glaciers came down from Canada and then melted in the United States. The midwestern and eastern parts of the states were heavily glaciated, as can be noted from horns, aretes, strata, grooves, U-shaped valleys.

Post - Viewing Activities:

1. Review the two major types of features (erosional and depositional). Have the students list the resulting products of each.
2. Look at a geological map of your area and see if there is any evidence of glaciers having passed through.
3. Which period of glaciation affected your area most?
4. What were the four periods of glaciers which affected the United States?

Home Activities:

1. Find out what national parks in America contain glacier features (Yosemite, Glacier, Rick Map, Yellowstone, Mt. Rainier, Arcadia).
2. Find a photograph of some erosional and depositional features of glaciers.
3. Visit a gravel pit or rockcut and see if you can find glacial till or drift.

QUIZ ANSWERS

- 1) C
- 2) D
- 3) B
- 4) B
- 5) C
- 6) D
- 7) C
- 8) A
- 9) A
- 10) D

Physical Geography II Series

GLACIERS: CLUES TO FUTURE CLIMATE KG1173DVD

PROGRAM DESCRIPTION

Present-day glaciers have considerable economic importance in many areas. In the Western United States glaciers are considered to be frozen reservoirs which release water during the warmer summer months. They are also of considerable importance to the irrigation of crops and hydroelectric power and to feeding underground water reservoirs. For this reason scientists have been studying glaciers around the world. Are we still coming out of an ice age which covered much of New England and the Midwest just 13,000 years ago. Or are we heading into another ice age in the near future. Explore how glaciologist are using new scientific tools to study glaciers on the surface of the Earth. See how satellites are keeping track of glacial growth or shrinkage in places like Antarctica, Greenland and Iceland.

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