

DYNAMIC GLACIERS

Glaciers 101

Grades

4-6

Objective

This reading activity will introduce students to glaciers and give them the opportunity to summarize main points, record questions they want to investigate, and develop related vocabulary.

Materials

- "What Are Glaciers" article
- NatGeo "Fun Facts"
- Graphic Organizer

Sources: <https://kids.britannica.com/kids/article/glacier/346123>
https://www.ducksters.com/science/earth_science/glaciers.php
<https://www.natgeokids.com/uk/discover/geography/physical-geography/glaciers/>
Retrieved 02.23.22 and adapted by:



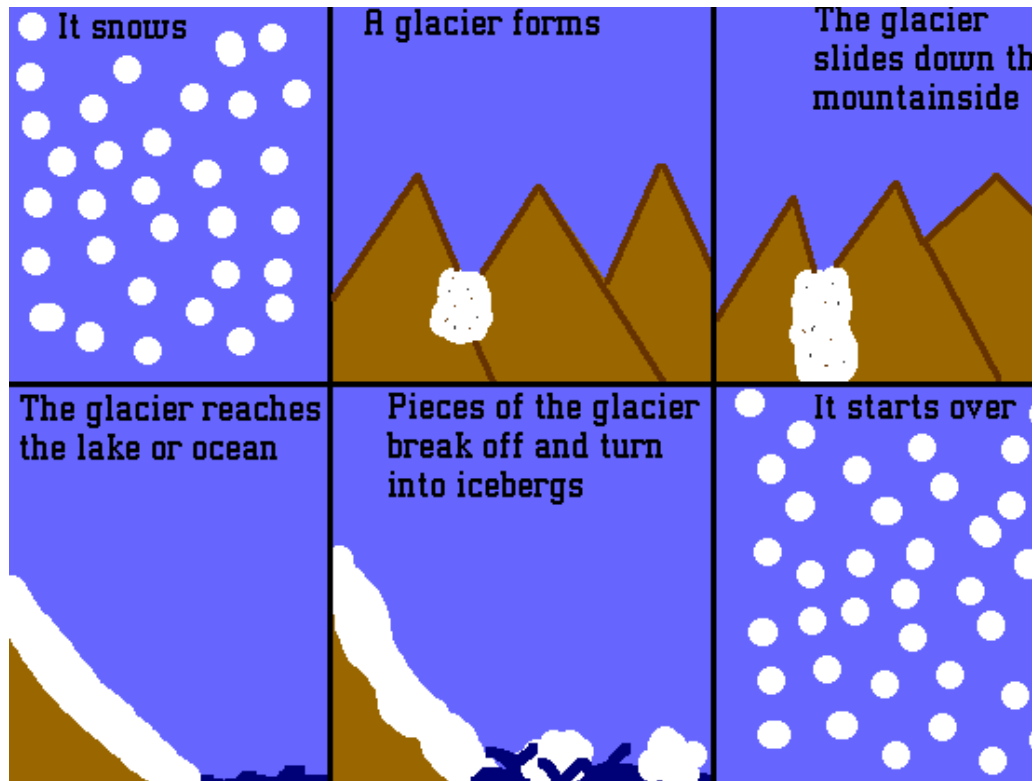
WHAT IS A GLACIER? A glacier is a large area of thick ice that remains frozen from one year to the next. Glaciers also slowly flow over the land. Thousands of years ago, large parts of the world were covered with glaciers. At times glaciers covered about 30 percent of Earth's surface. At other times there were fewer glaciers than there are today.



HOW GLACIERS FORM Glaciers are formed when snow is packed down into ice. Snow crystals accumulate year by year in areas where the temperatures never become high enough to completely melt the snow and ice. When a large amount has accumulated, the snow is under great pressure from the weight. Eventually the snow becomes packed so tightly together that it turns into ice.

HOW GLACIERS CHANGE THE LAND Although glaciers are made of ice and appear to be sitting still, they are actually moving. The weight of a glacier will cause it to move slowly downhill, sort of like a very slow moving river. The speed of glaciers varies widely with some moving as slow as a few feet a year while others may move several feet per day. When glaciers move they can change the land creating many interesting new land forms like moraines, drumlins, and fjords (it's pronounced "fyords").

Because of friction, the top of a glacier moves faster than the bottom. A retreating glacier doesn't actually travel backward, but is melting faster than it is gaining new ice.



WHERE ARE THERE GLACIERS? Glaciers exist all over the world today. Most of Greenland is covered by thick sheets of glacier ice, as is Antarctica. There are smaller glaciers in the Rocky Mountains of North America, in the European Alps, in the Andes of South America, and even at mountainous points along the Equator. There are also 664 named glaciers in Alaska!

EFFECT ON THE ENVIRONMENT Glacier ice today stores about three-fourths of all the fresh water in the world. Many people believe that if temperatures around the world increased enough that the glaciers melted, sea levels would increase greatly and flood coastal areas. The world's sea levels are already rising about 0.08 inch (2 millimeters) every year. Scientists believe that melting glaciers cause much of this rise.

Despite this activity, it is unclear how much sea levels might eventually rise because of melting glaciers. Some scientists believe that if temperatures on Earth were to rise dramatically, the warming of the air would cause moisture to form in the atmosphere. This moisture would fall as rain and snow, which could balance out any melting that might occur.



10 FAB GLACIER FACTS FROM NATGEO KIDS

- 1) Glaciers are huge masses of ice that “flow” like very slow rivers. They form over hundreds of years where fallen snow compresses and turns into ice.
- 2) Glaciers form the largest reservoir of fresh water on the planet. In fact, they store 75% of the world’s fresh water!
- 3) Today, glaciers cover around 10% of the Earth’s total land area. During the last ice age they covered 32%. Brrrr!
- 4) Glaciers are usually divided into two groups – Alpine glaciers, which form on mountainsides and move downward through valleys, and Continental ice sheets, which spread out and cover larger areas.
- 5) The world’s largest glacier is Lambert Glacier, located in Antarctica, measuring approximately 62 mi wide, 249 mi long and 1mi.5 deep!

Source: <https://www.natgeokids.com/uk/discover/geography/physical-geography/glaciers/>
Retrieved 02.22.22



- 6)** Because glacial ice is so dense and compact, it often appears a bright blue color!
- 7)** The Kutiah Glacier in Pakistan has the record for the fastest glacier surge. In 1953, it moved more than 7mi in three months.
- 8)** Earth's two ice sheets cover most of Greenland and Antarctica and make up more than 99% of the world's glacial ice.
- 9)** If the Antarctic ice sheet were to melt entirely, it is estimated that sea levels would rise by around 210 feet. That means that New York would be lost underwater!
- 10)** Glacial ice can be hundreds of thousands of years old, which makes it a valuable resource for assessing climate change. By extracting and analyzing the ice, scientists can learn about what the climate was like on Earth thousands of years ago!

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Name _____

Taking Notes

Directions: Use this organizer to take notes on the essay.

list of key words

words I need to define

summary of main points

interesting facts

questions I have