

## **Antarctica's Reading**

Antarctica is the frozen desert where no human lives permanently. Learn about the geography of this truly unique part of the earth, then take a short quiz to see what you have learned.

**Geography of Antarctica** Usually when we talk about geography, it's important to consider two things: the physical and natural geography of an area, and the human geography of an area - the ways that humans have affected a landscape, and the ways that landscape has affected humans. But when it comes to Antarctica, physical geography is far more significant than human. Antarctica is a cold, frozen, and mostly empty land found at the South Pole of the earth. Humans go there mostly for research and occasional tourism, though it's incredibly inhospitable, especially in the colder months. When it comes the physical geography of Antarctica, there is plenty to think about.

Antarctica is a land encased in ice, but with some highly active volcanoes. It contains sea ice, land ice, and ice shelves. It's the front line for global warming research, and home to some truly giant mountains. And it is huge. In fact, Antarctica is almost 50% larger than the USA. So, discussing the geography of Antarctica is not as simple as you might think. But in this lesson, we are going to briefly cover each of the main features of Antarctica's geography.

**Regions and Human Influence** Even in a land with no permanent human inhabitants, humans still have an influence. When you look to map of Antarctica, you will notice that it is not empty. Humans have mapped and labeled parts of Antarctica, giving names to peaks and regions. The continent is split into three main sections. The largest is on the east side of the Transantarctic Mountains and is called East Antarctica. The west side of the Transantarctic Mountains is called West Antarctica. And the small

pointed mass that points up towards South America is called the Antarctic Peninsula.

Map of Antarctica Humans do visit Antarctica. Some visit to stay in one of several science stations found on the continent, and others visit for tourism purposes. Most tourists stay near the coasts, and the majority do not go beyond the Antarctic Peninsula, since this is cheaper and easier to get to. Although Antarctica is not very attractive for colonization due to the intense cold, it also remains the last true wilderness on earth and is protected by an international agreement called the Antarctic Treaty of 1961.

In this Treaty, world leaders agreed that everywhere south of 60° south latitude would remain unclaimable by any country. The treaty says that it cannot be used in military reasons, or to dispose of radioactive waste - only peaceful research can be done. This is an extremely important step that has helped protect Antarctica. But unfortunately, human influences are not always direct. Thanks to climate change, many of the ice shelves are melting and collapsing. Although this effect is tiny in the context of Antarctica as a whole, the amount of water stored as ice in Antarctica is astronomical, and so the impact on the world's sea levels could be significant in the future. Mountains and Volcanoes Antarctica might look like a lump of ice, but it is really a continent. Under the ice is solid land. And that land is quite dramatic - it is a land of volcanoes and mountains. There are four known active volcanoes in Antarctica: Mounts Melbourne, Berlin, Kauffman, and Hampton.

There are at least six other volcanoes on offshore islands. The tallest mountain in Antarctica is Mount Vinson, which reaches 16,050 feet above sea level. It's found

in the Sentinel Range of the Ellsworth Mountains. Most of the mountains in Antarctica form part of the Transantarctic Mountains.

The Ellsworth Mountains Climate and Ice Shelves Antarctica has one of the most extreme climates on Earth. It's the coldest place on earth, and also dry enough to be classified as a desert. The record lowest temperature ever detected on Earth was in Antarctica: a chilly  $-93.2^{\circ}\text{C}$  ( $-135.8^{\circ}\text{F}$ ). Antarctica's precipitation is hard to measure, but we believe it averages about 6.5 inches per year. The low rainfall is partly because of katabatic winds, which are winds that rush down the sides of mountains. These winds stop weather fronts from entering Antarctica. While there are many deserts on Earth that get significantly less than 6.5 inches of rain per year, Antarctica does include one unusually dry spot: the Dry Valleys have not received rain for around 2 million years. Since Antarctica is super dry, there are very few lakes or rivers. The longest river is the Onyx River and is only 20 miles long. Because of the cold temperatures, Antarctica is also home to sea ice along its edges. The largest areas of sea ice are called ice shelves.

The two biggest ice shelves in Antarctica are the Ronne Ice Shelf and the Ross Ice Shelf at opposite sides of West Antarctica.

Ice Shelves of Antarctica Lesson Summary Antarctica is a continent that is 50% larger than the USA, found at the South Pole of the earth. It is split into East Antarctica and West Antarctica, which are separated by the Transantarctic Mountains, and the Antarctic Peninsula. The largest mountain in Antarctica is found in the Sentinel range of the Ellsworth Mountains, and is called Mount Vinson. Antarctica contains at least four active volcanoes on the mainland and six others on islands. Antarctica is the coldest place on earth, and one of the driest.

Katabatic winds stop weather fronts entering the continent, keeping it dry. Human activity in Antarctica is limited by the Antarctic Treaty of 1961.

This stops countries from claiming anywhere south of 60° south latitude and prevents military activities or radioactive waste disposal. Antarctica is used purely for science and tourism. Scientists visit one of several camps to do research (especially researching extreme environments, and climate change), and tourists tend to visit the coasts and Antarctic Peninsula.

