

Welcome to the Northern States Edition of the *Investi-gator*!

Have you ever thought about where you live on Earth? Earth is like a round ball which spins on its **axis** (**aks** is). Earth's axis is an imaginary line connecting its north pole and its south pole (**figure 1**). The equator divides the northern half of Earth from its southern half. Areas near the equator are warmer. The position of the sun's rays keep this area warmer. Areas near the poles have a brief summer and are cold compared with other areas of Earth.

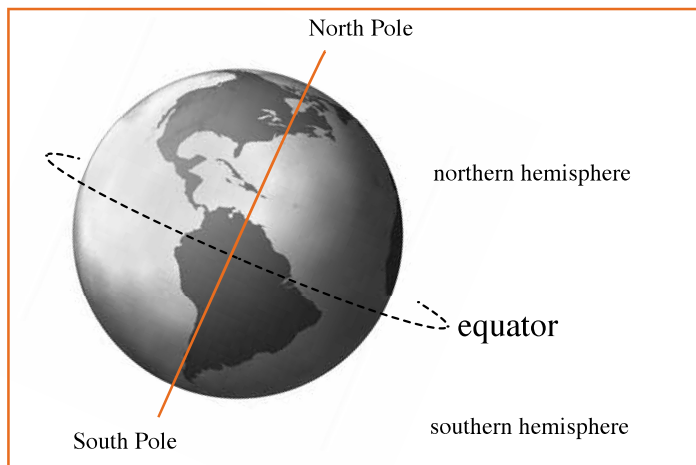


Figure 1. Can you see the line between the north pole and the south pole? The Earth's axis is slightly tilted.

The land between the poles and the equator is different. It is different because the **climate** (**kli** met) changes during the year. The climate is the average condition of the weather over large areas, over a long time, or both.

In general, areas close to the equator are warmer. Areas close to the poles are cooler. There are other things that affect an area's climate too, like **altitude** (**al** tuh **tud**) and Earth's ocean currents. Altitude is how high an area is above sea level. An area in the mountains is cooler than an area closer to sea level. The ocean currents affect weather. Weather affects climate.

This *Investi-gator* journal focuses on scientists working in a particular area on Earth. That area is the Northern United States (**figure 2**). This area has a cool climate compared with areas near the equator. Because of this, scientists working in the Northern United States might study different topics than scientists elsewhere. On the other hand, some scientific topics are the same, no matter where a scientist is working.



Figure 2. The Northeastern United States is made up of twenty states.

In this journal, you will read about four topics. The scientists did their research in the Northern United States, but the topics are important no matter where you live. The first article explains why some tree leaves turn red in the fall of the year. The second article explains how the chemical ozone affected trees in Wisconsin. The third article examines how we protect the environment through policies. The fourth article discusses how soil activity changes in the wintertime. Forest Service scientists have all been a part of the research in these articles. You can learn more about the Forest Service by reading the inside back cover of this journal, or by visiting <http://www.scienceinvestigator.org>