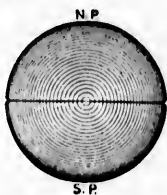


11. Latitude and Longitude.

Here is the picture of a ball meant to represent the earth. Name the line drawn round the middle part. Can you tell the meaning of the letters N.P. and S.P.? At play some day take a big lump of soft, tough clay and make an earthen globe to stand for the world. Get it rolled into a perfect sphere, sprinkle a little sand all over it, and put it in a dry place till it hardens. After that mark the equator with an even scratch around your sphere. Drill a small hole to stand for the north pole and another for the south pole.



In going from the equator to the north pole what part of the whole distance round the world do you pass over? Is it one-half or one-quarter? Well, when we want to tell how far a place is from the equator, we divide this distance from the equator to the pole into ninety equal parts called *degrees of latitude*, so that the equator is just ninety degrees of latitude from each pole. How many degrees of latitude measure the distance from pole to pole? How many degrees must there be in the whole circumference of the earth? Yes, for convenience every circle is divided into 360 equal parts and each part is called a degree. As we measure latitude on a quarter of the whole circle, we can see that the latitude of any place must lie between 0° and 90° . The latitude of Toronto is about 44° north; the latitude of Dunedin, New Zealand, is about 46° south; of New Westminster, British Columbia, a little over 49° north. Turn up the maps and find these places. Now you know that latitude means the distance of a place north of the equator, or south of the equator, as the case may be. On maps it is usual to mark the latitude by lines drawn across the map from east to west.

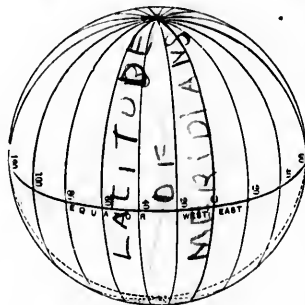
Here is a picture that shows the *parallels of latitude* 10° apart. On the maps the degrees of latitude are marked at the sides. You can count them in the northern hemisphere up



Parallels of Latitude.

to 90° at the north pole. Look over the maps and notice the parallels of latitude with the figures marked on the sides to tell how far these lines are north or south of the equator. Now mark some parallels of latitude on your clay globe at even distances.

Do you see the line marked on this ball, that goes through London, England? It reaches from pole to pole and is called a *meridian*. Take your clay globe and scratch a meridian evenly from pole to pole. Put a small dot to stand for London, which lies between 51° and 52° north of the equator. This meridian is very important and is called the *first meridian*, or *prime meridian*. Very often it is called the *meridian of Greenwich*, because in one part of London, called Greenwich, there is a celebrated observatory through which this first meridian passes. Take your clay globe again and scratch your meridian line from pole to pole on the other side also. It now makes a complete circle and cuts the equator in two places exactly opposite each other. How many degrees are there in a circle? How many in half a circle? Yes, these two points on the equator are 180° apart, and the distance of any place east or west of the first meridian is measured in degrees which are called degrees of *longitude*. You can see that the longitude of any place must lie between 0° and 180° . You can also see that 180° east longitude brings us to the same meridian as 180° west longitude, because we measure longitude on half of the whole circumference of the world. The longitude of Toronto is a little over 79° west from Greenwich; the town of Dunedin, New Zealand, is in 170° east longitude; and New Westminster, B.C., is in 123°



Meridians of Longitude.

west longitude. Turn up the maps and find the places again. The longitude is marked along the top and along the bottom of the maps; none of the numbers is greater than 180° .

Here is a picture that shows the *meridians of longitude* drawn 20°