

Name: _____ Laboratory Section: _____
Date: _____ Score/Grade: _____

Video
Exercise 1
Pre-Lab Video



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LAB EXERCISE

Latitude and Longitude

Lab Exercise and Activities

SECTION 1

Great and Small Circles

1. London, England, and Colombo, Sri Lanka (English Channel, Germany, Carpathian Mtns.)

English Channel, Netherlands, Germany, Carpathians, Romania, Black Sea, Turkey, Zagros Mountains., Iran, Arabian Sea, southern tip of India

2. Vancouver, British Columbia, and Sydney, Australia

Vancouver Island, Pacific Ocean, Tropic of Cancer, Hawaiian Islands (Kauai, Niihau), equator, International Date Line, New Hebrides, New Caledonia, Tasman Sea

3. Your hometown and Beijing, China

Personal answer depends on your location

SECTION 2

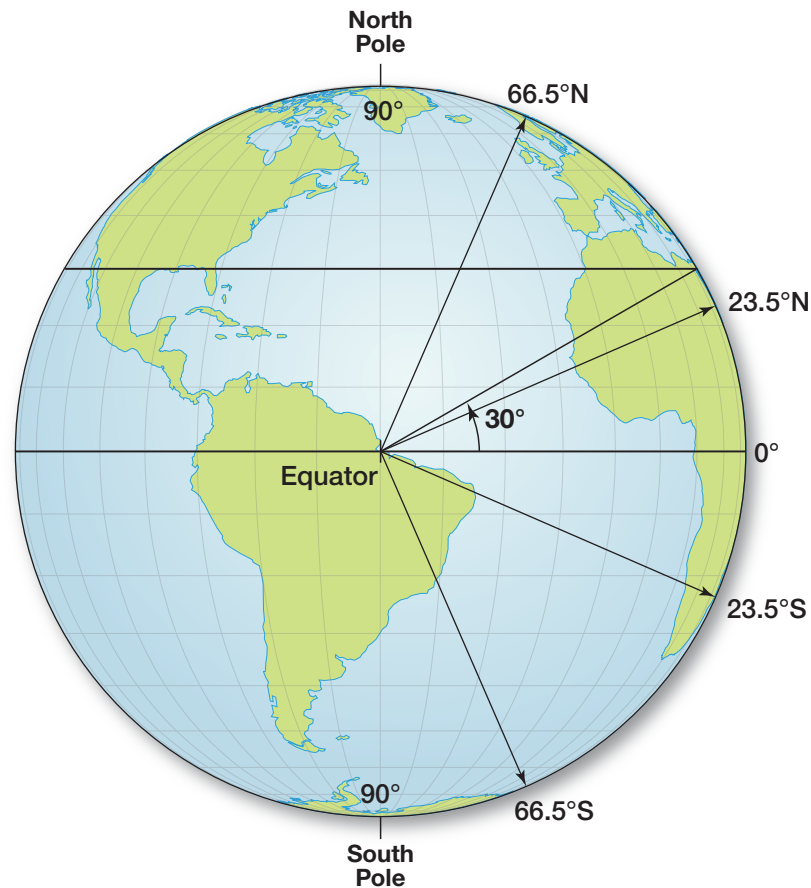
Latitude and Parallels

1. Parallels have often been used to demarcate political boundaries. The 49th parallel north forms a portion of the border between which two countries?

The Canada–United States border from Manitoba/Minnesota area to the Pacific Coast.

2. Parallels made famous by wars in the last century include the parallel dividing the two Koreas and the parallel that divided Vietnam until 1975. (The border was approximately 80 km [50 mi] north of the city of Hue.) What are these two parallels?

38th and 17th



▲ Figure 1.3 Measuring latitudes on Earth

4. Using a globe and your atlas or other world map, locate three cities that are located at approximately the 23rd parallel in the Northern Hemisphere; note their location in degrees (and minutes, if your map is detailed enough to estimate minutes). Use the globe first, then refer to the atlas maps to better determine specific latitudes. Be sure and list their country names as well.

City and Country Name	Longitude (degrees and minutes, if possible)
a) <u>Cabo San Lucas, Mexico</u>	<u>109° 55' W</u>
b) <u>Havana, Cuba</u>	<u>82° 24' W</u>
c) <u>Guangzhou, China</u>	<u>113° 15' E</u>

5. List the names and longitudes of three cities that are located at approximately your latitude.

City and Country Name	Longitude
a) <u>personal answers</u>	_____
b) _____	_____
c) _____	_____

SECTION 3

Longitude and Meridians

1. On a political globe or world map follow the International Date Line across the Pacific Ocean. Why do you think the International Date Line is not straight but zigs and zags?

The International Date Line zigzags to avoid local confusion. If the Date Line passed through a country, imagine the confusion of having the country split with each side experiencing a different day! Political reasons exist as well. The island country of Kiribati moved the International Date Line to its eastern margin (150° west longitude) to be the first to experience each new day. These distortions of the IDL only apply to the countries and their territorial waters and not to international waters between them and the 180th meridian.

2. Examine an atlas or a political globe and in the spaces marked a through h list the provinces and states through which the 100th meridian in the Western Hemisphere passes—north to south. The first answer is provided for you in bracketed italics.

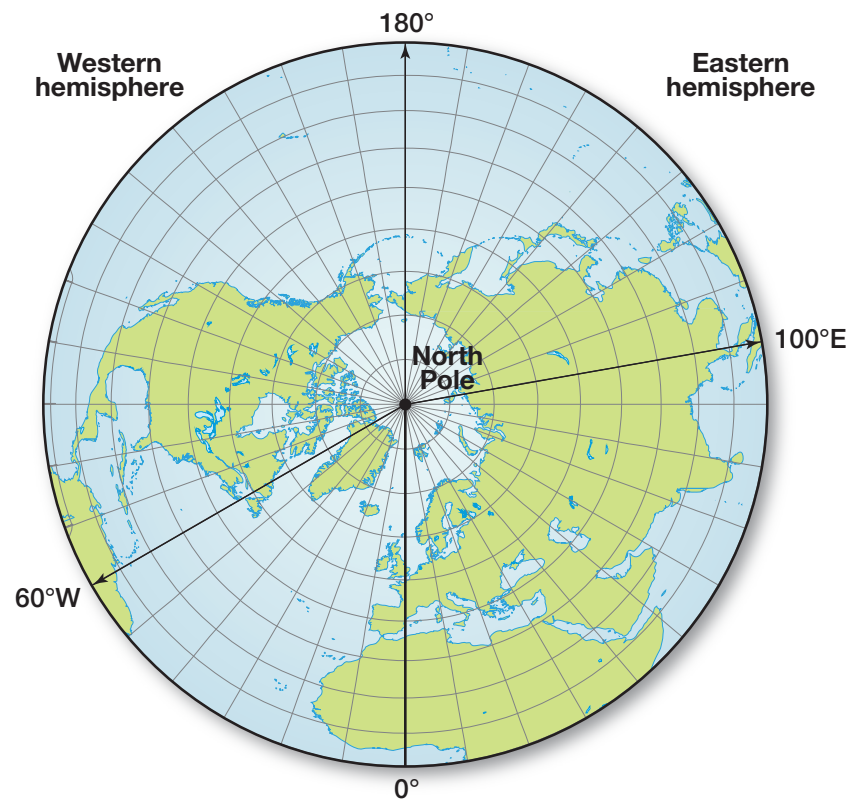
- | | | | |
|----------|--------------------------|----------|-----------------|
| a) _____ | <i>[Nunavut, Canada]</i> | e) _____ | <i>Nebraska</i> |
| b) _____ | <i>Manitoba</i> | f) _____ | <i>Kansas</i> |
| c) _____ | <i>North Dakota</i> | g) _____ | <i>Oklahoma</i> |
| d) _____ | <i>South Dakota</i> | h) _____ | <i>Texas</i> |

3. **Figure 1.5** is a view of Earth from directly above the North Pole; the equator is the full circumference around the edge. A line has been drawn from the North Pole to the equator and labeled 0°, representing the prime meridian. Earth's prime meridian through Greenwich, England, was not generally agreed to by most nations until 1884. To the right of 0° on the diagram is the *Eastern Hemisphere*, and to the left of 0° is the *Western Hemisphere*.

- a) Label both the Eastern Hemisphere and the Western Hemisphere.
- b) Extend another line from the North Pole to the other side of Earth, opposite the prime meridian, and label it 180°. You now have marked the line that is the International Date Line, which extends from North to South Poles on the opposite side of Earth from the prime meridian.

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- c) Using your protractor, measure, draw, and label the meridians that are 100° east and 60° west of the Greenwich meridian.
- d) Finally, locate, draw, and label the meridian that marks your present longitude.



▲ **Figure 1.5** Measuring longitudes on Earth