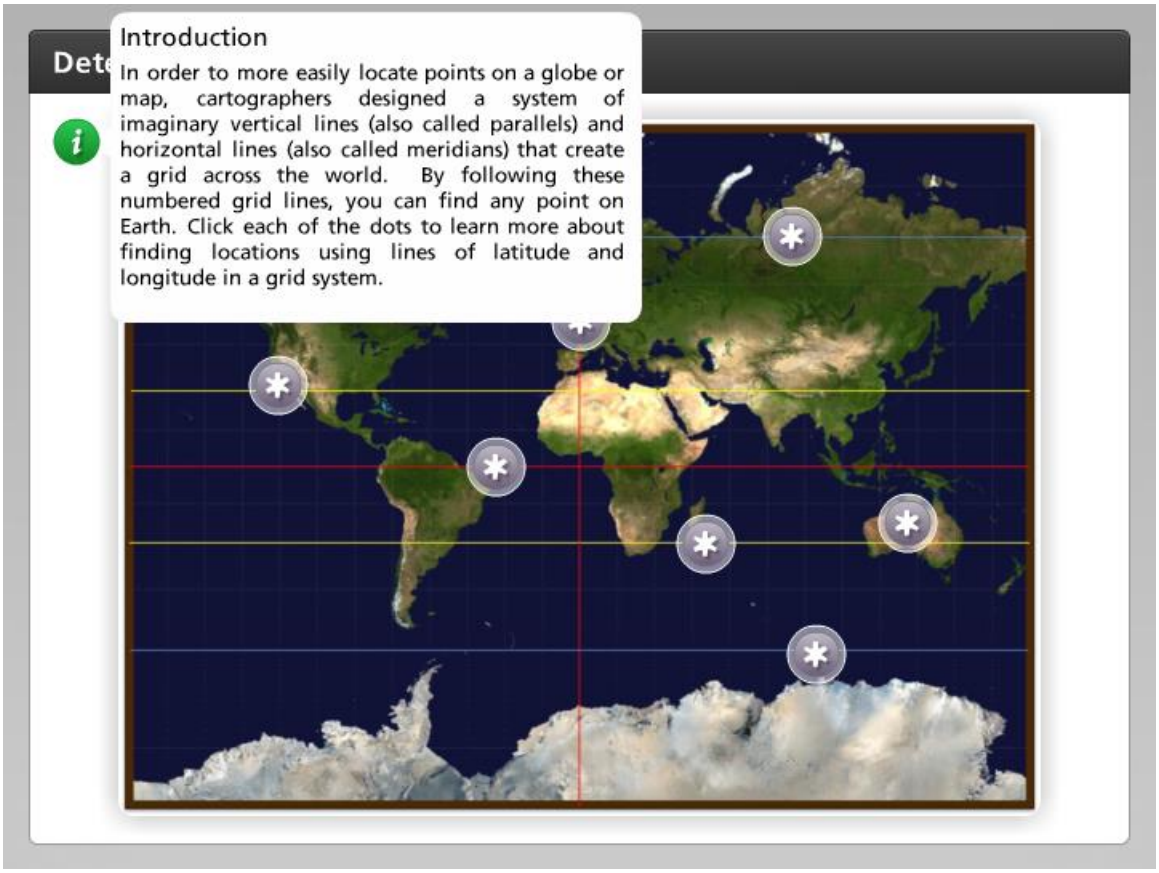
Module 2: Mapping
Topic 2 Content: Determining Latitude and Longitude Notes

Introduction



In order to more easily locate points on a globe or map, cartographers designed a system of imaginary vertical lines (also called parallels) and horizontal lines (also called meridians) that create a grid across the world. By following these numbered grid lines, you can find any point on Earth. Click each of the dots to learn more about finding locations using lines of latitude and longitude in a grid system.

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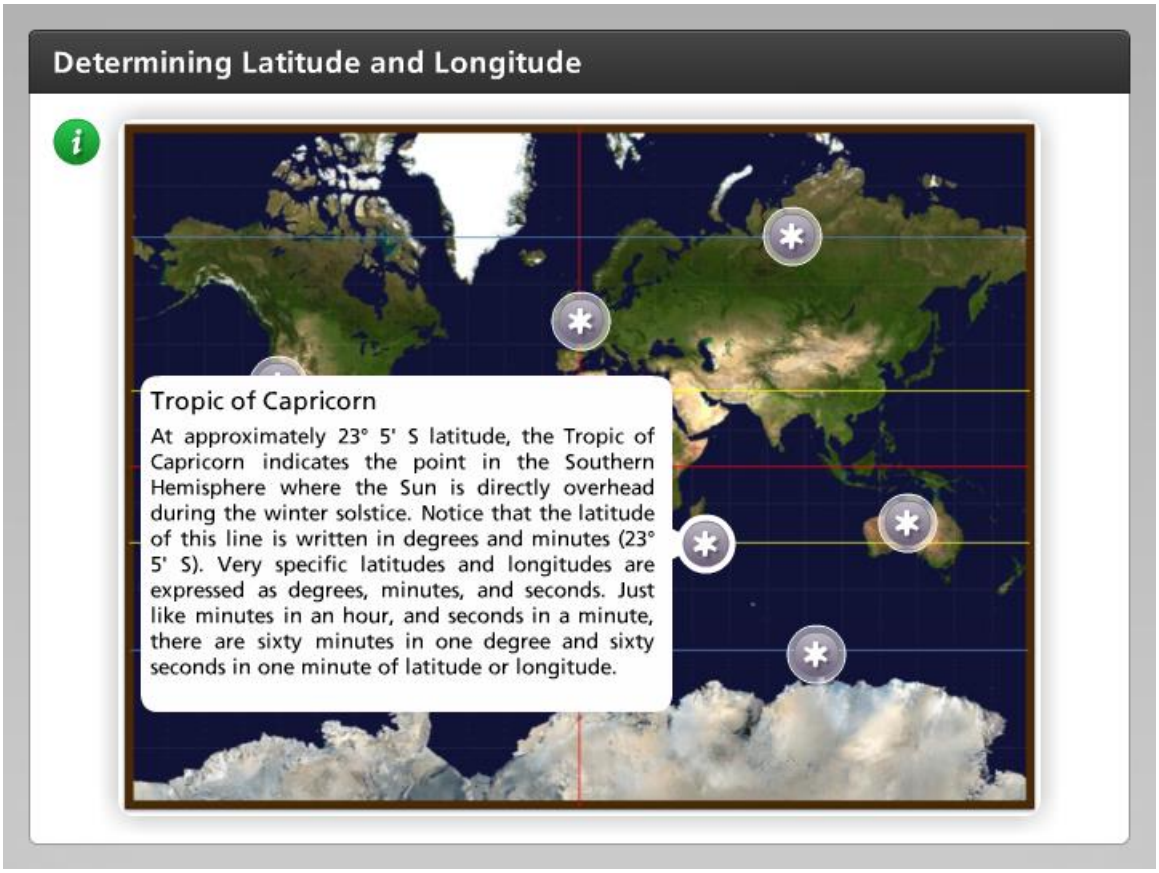
Tropic of Capricorn



At approximately 23° 5' S latitude, the Tropic of Capricorn indicates the point in the Southern Hemisphere where the Sun is directly overhead during the winter solstice. Notice that the latitude of this line is written in degrees and minutes (23° 5' S). Very specific latitudes and longitudes are expressed as degrees, minutes, and seconds. Just like minutes in an hour, and seconds in a minute, there are sixty minutes in one degree and sixty seconds in one minute of latitude or longitude.

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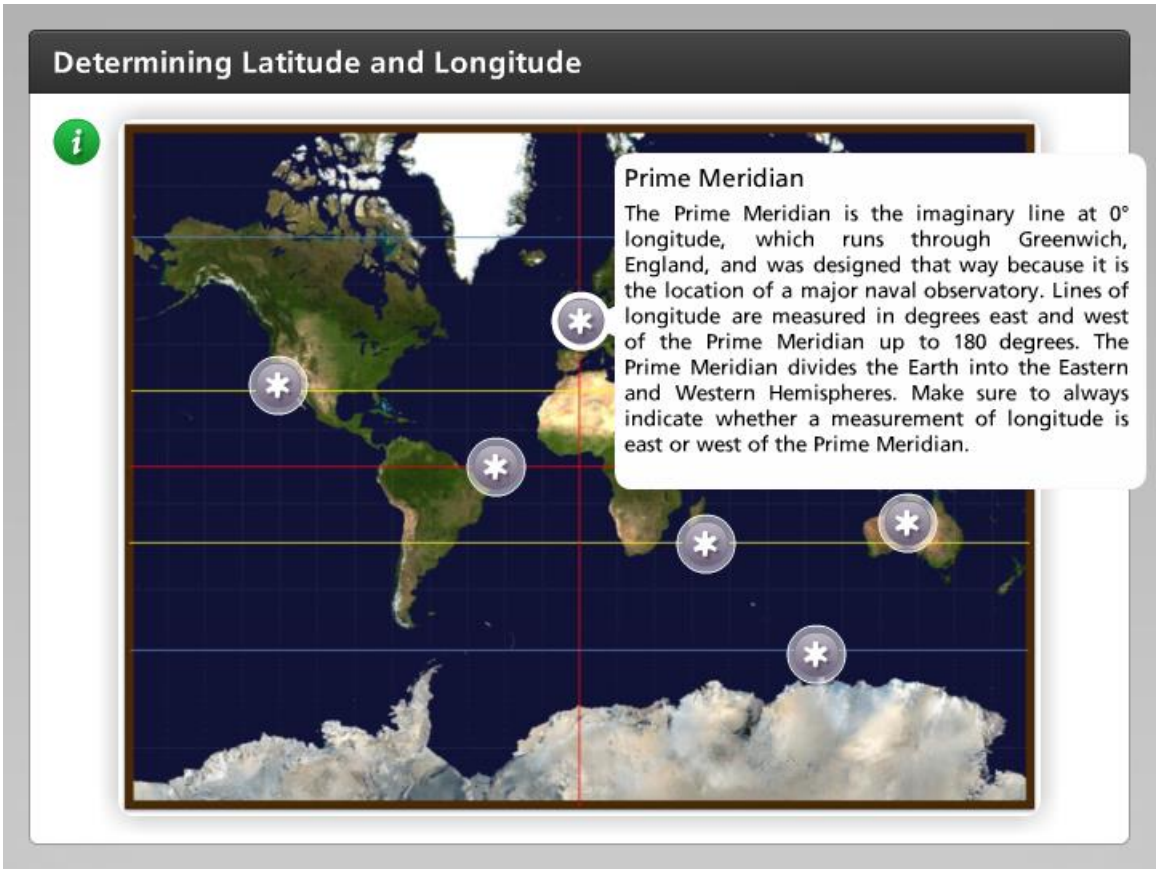
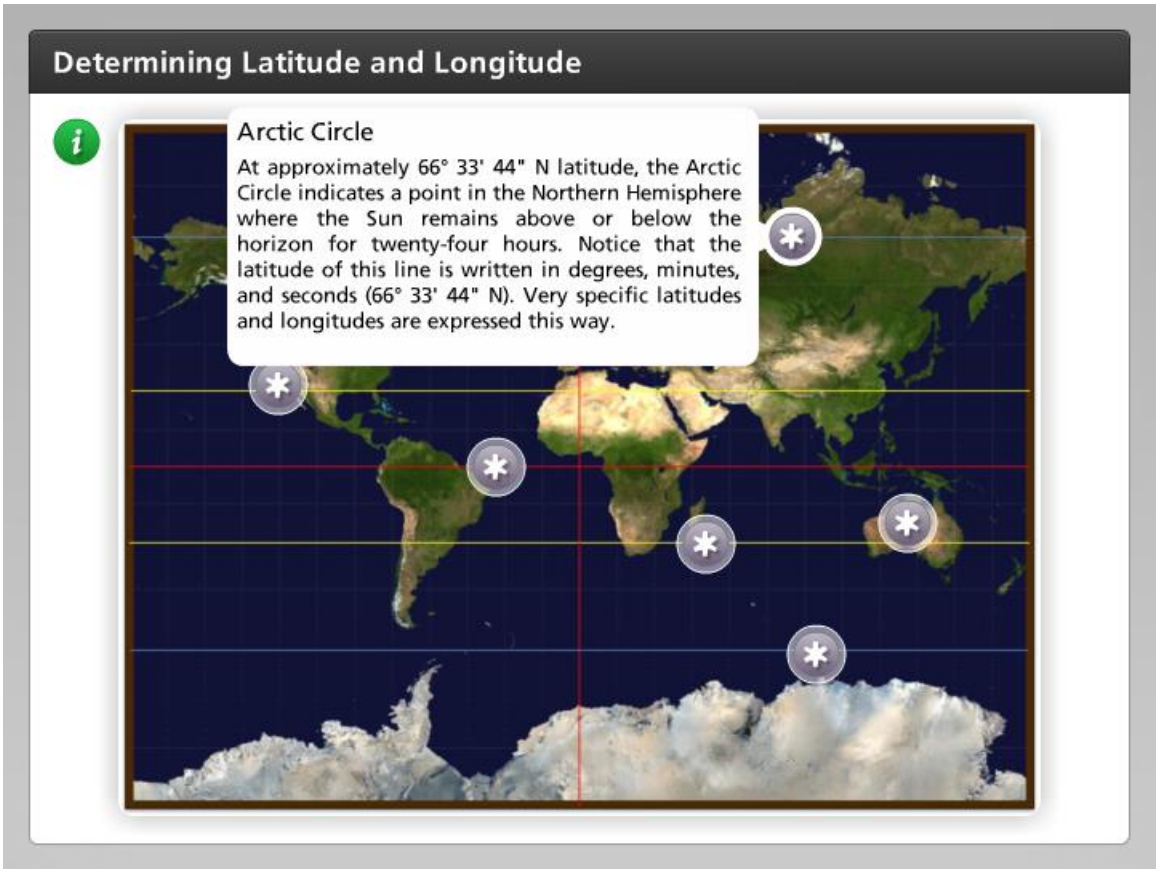
Prime Meridian



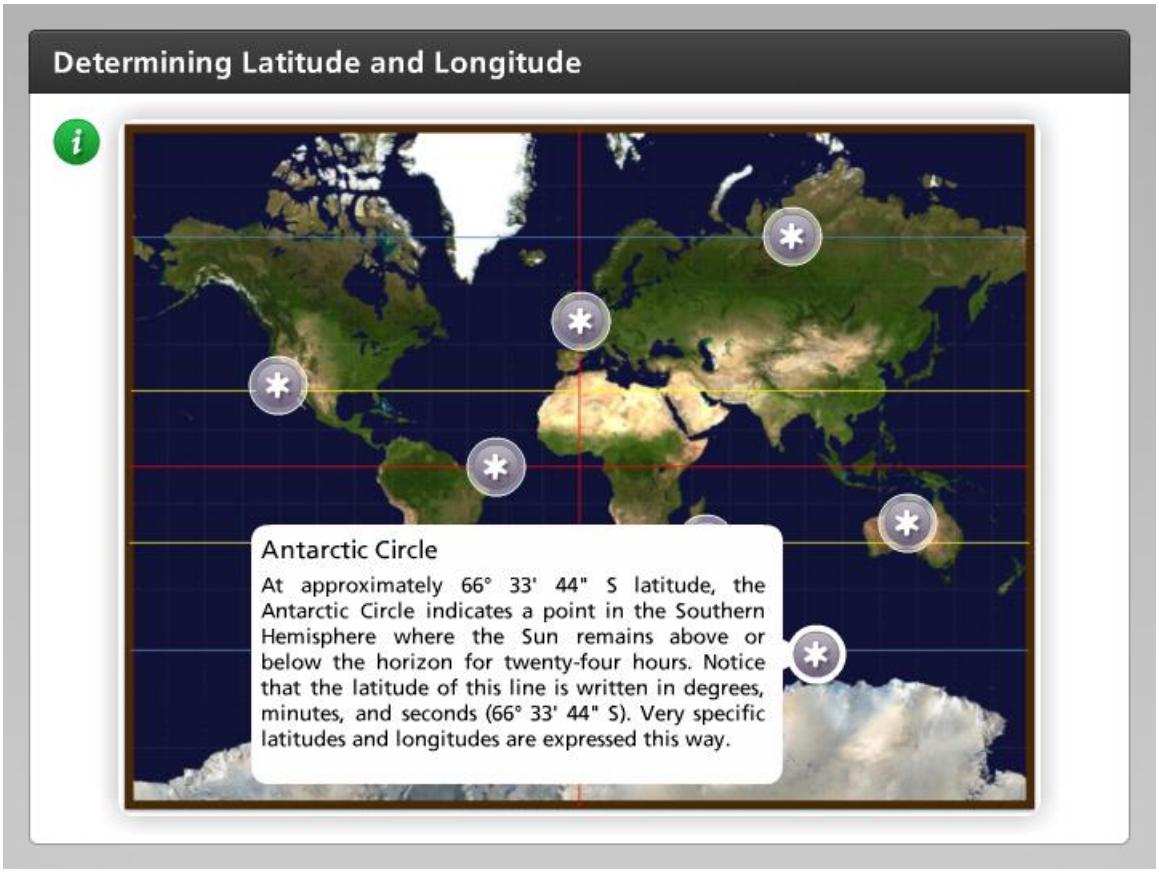
The Prime Meridian is the imaginary line at 0° longitude, which runs through Greenwich, England, and was designed that way because it is the location of a major naval observatory. Lines of longitude are measured in degrees east and west of the Prime Meridian up to 180 degrees. The Prime Meridian divides the Earth into the Eastern and Western Hemispheres. Make sure to always indicate whether a measurement of longitude is east or west of the Prime Meridian.

Arctic Circle



At approximately 66° 33' 44" N latitude, the Arctic Circle indicates a point in the Northern Hemisphere where the Sun remains above or below the horizon for twenty-four hours. Notice that the latitude of this line is written in degrees, minutes, and seconds (66° 33' 44" N). Very specific latitudes and longitudes are expressed this way.

Antarctic Circle



At approximately 66° 33' 44" S latitude, the Antarctic Circle indicates a point in the Southern Hemisphere where the Sun remains above or below the horizon for twenty-four hours. Notice that the latitude of this line is written in degrees, minutes, and seconds (66° 33' 44" S). Very specific latitudes and longitudes are expressed this way.

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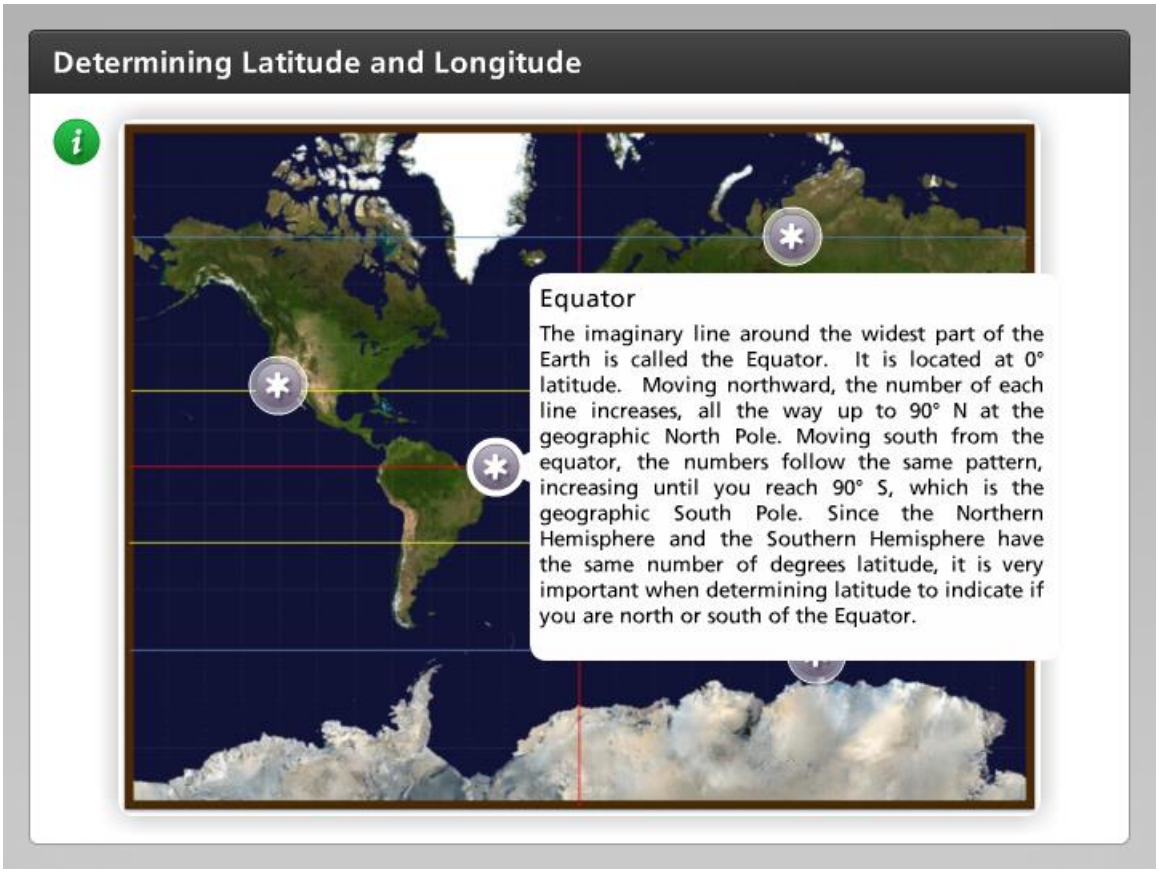
Equator



The imaginary line around the widest part of the Earth is called the Equator. It is located at 0° latitude. Moving northward, the number of each line increases, all the way up to 90° N at the geographic North Pole. Moving south from the equator, the numbers follow the same pattern, increasing until you reach 90° S, which is the geographic South Pole. Since the Northern Hemisphere and the Southern Hemisphere have the same number of degrees latitude, it is very important when determining latitude to indicate if you are north or south of the Equator.

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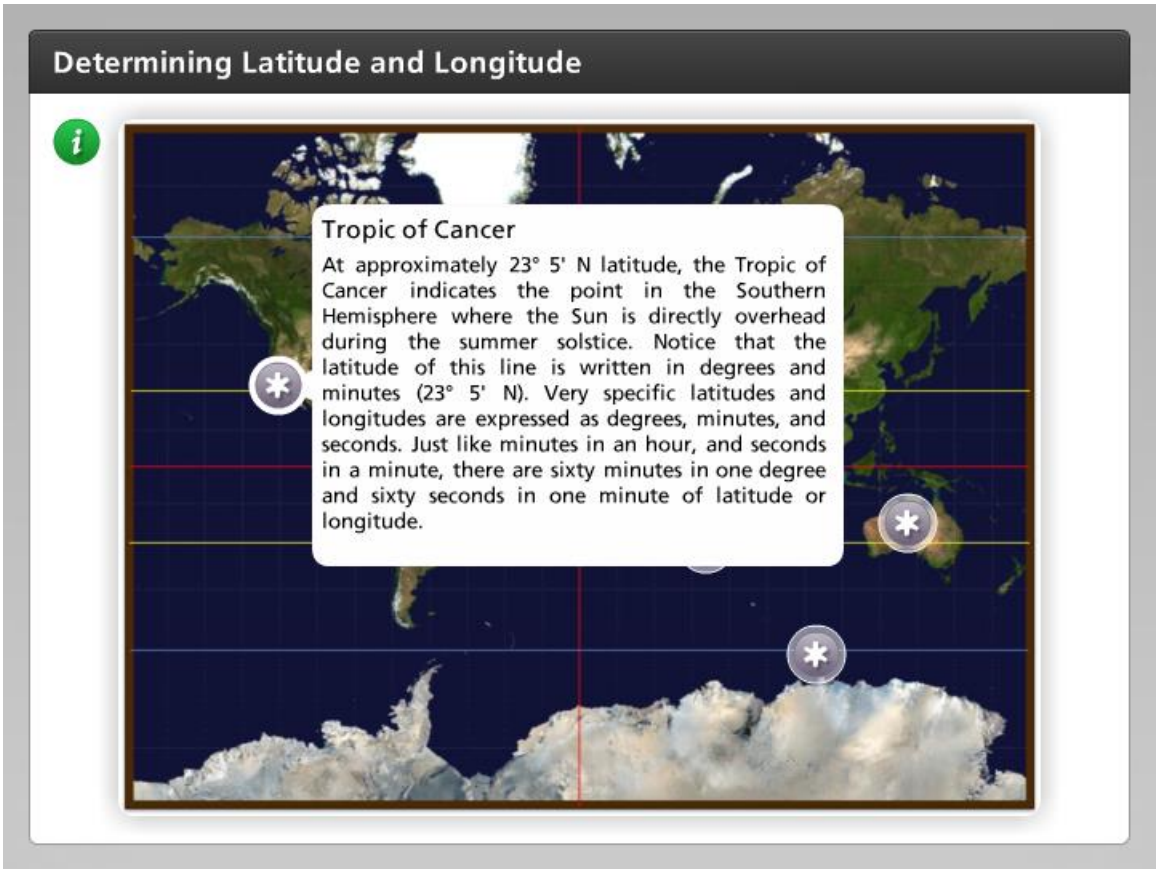
Tropic of Cancer



At approximately 23° 5’ N latitude, the Tropic of Cancer indicates the point in the Southern Hemisphere where the Sun is directly overhead during the summer solstice. Notice that the latitude of this line is written in degrees and minutes (23° 5’ N). Very specific latitudes and longitudes are expressed as degrees, minutes, and seconds. Just like minutes in an hour, and seconds in a minute, there are sixty minutes in one degree and sixty seconds in one minute of latitude or longitude.

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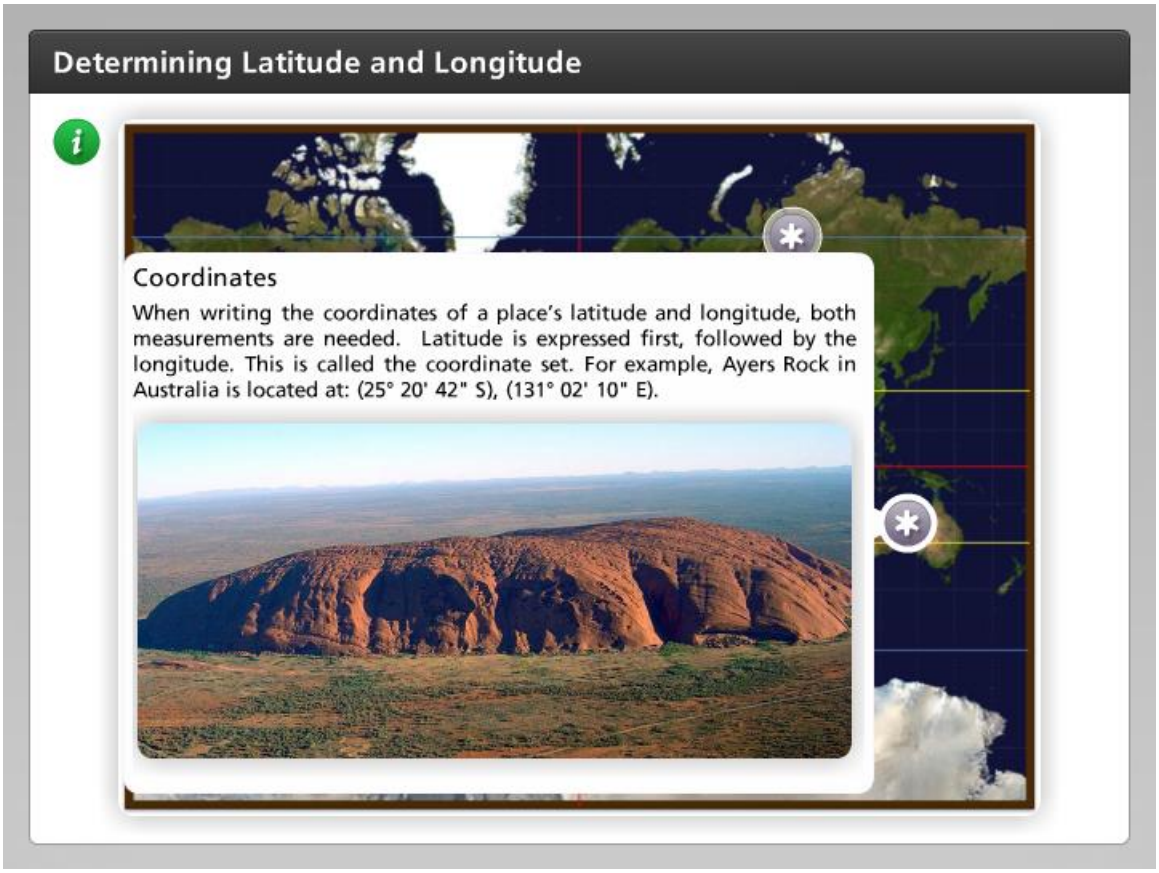
Coordinates



When writing the coordinates of a place's latitude and longitude, both measurements are needed. Latitude is expressed first, followed by the longitude. This is called the coordinate set. For example, Ayers Rock in Australia is located at: (25° 20' 42" S), (131° 02' 10" E).