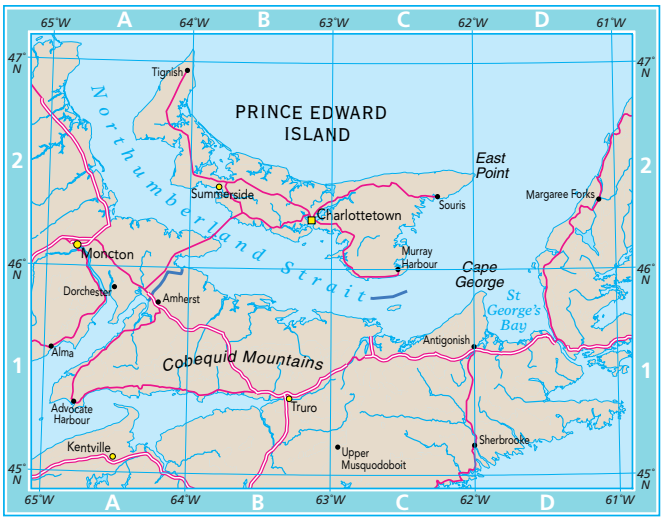
There are several ways of finding places on a map. This atlas uses three different methods:

- letters and numbers around the edge of the map
- lines of latitude and longitude drawn on the map
- the military grid system (see page 199) for Canadian topographic maps

1 LETTERS AND NUMBERS

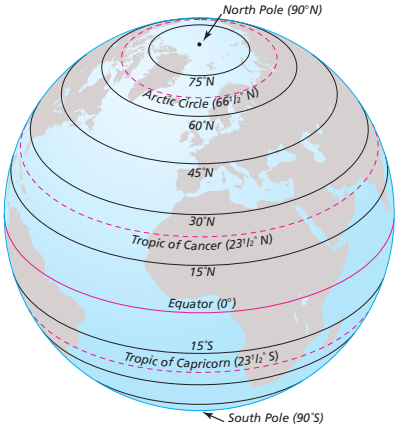
1. Find the name of the place in the gazetteer.
2. Find the page number and area reference (e.g., page 2, F2).
3. Go to the correct page in the atlas.
4. Find F in the border below the map, and find 2 on the side of the map.
5. Follow the letter up and follow the number across to find the correct square (F2).
6. Locate the place by searching the square.

Look at the map of Atlantic Canada. Charlottetown is located at B2, Truro is located at B1, and Moncton is located at A2.



2 LATITUDE

Latitude is distance, measured in degrees, north and south of the equator. Lines of latitude circle the globe in an east-west direction. The distance between lines of latitude is always the same; therefore, they are also known as parallels of latitude. Because the circumference of Earth gets smaller toward the poles, the lines of latitude are shorter nearer the poles.

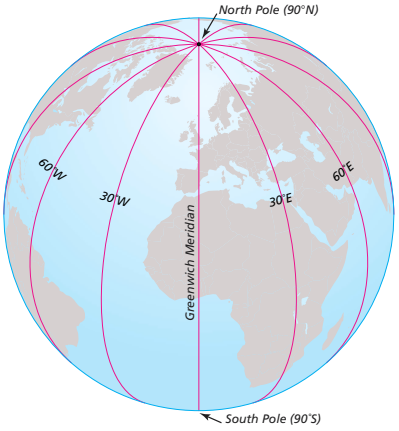


All lines of latitude have numbers between 0° and 90° and a direction, either north or south of the equator. The equator is at 0° latitude. It divides Earth into two halves: the Northern and Southern Hemispheres. The North Pole is at 90° north and the South Pole is at 90° south. The "tilt" of Earth has given particular importance to some lines of latitude . They include:

- the Arctic Circle at 66½° north
- the Antarctic Circle at 66½° south
- the Tropic of Cancer at 23½° north
- the Tropic of Capricorn at 23½° south

3 LONGITUDE

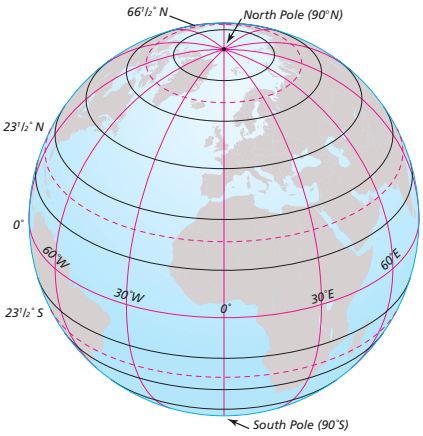
Longitude is distance, measured in degrees, east and west of the prime meridian. Lines of longitude join the poles in a north-south direction. Because the lines join the poles, they are always the same length, but are farthest apart at the equator and closest together at the poles. These lines are also called meridians of longitude.



Longitude begins along the Prime Meridian, or Greenwich Meridian, at 0°, in London, England. On the opposite side of Earth is the 180° meridian, which is the International Date Line. These two lines can be used to divide Earth into two halves: the Western Hemisphere and the Eastern Hemisphere. To the west of the Prime Meridian are Canada, the United States, and Brazil; to the east of the Prime Meridian are Germany, India, and China. All lines of longitude have numbers between 0° and 180° and a direction, either east or west of the prime meridian.

4 FINDING PLACES

When lines of latitude and longitude are drawn on a map, they form a grid, which looks like a pattern of squares. This pattern is used to find places on a map. Latitude is always stated before longitude (e.g., 42°N, 78°W).

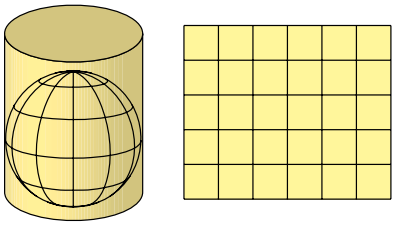


On the map of Atlantic Canada (above), Murray Harbour is directly on a line of **latitude** — representing 46°N. Similarly, Antigonish is directly on a line of **longitude** — representing 62°W.
Other places, not exactly on lines, use subdivisions of degrees called minutes. There are 60 minutes in a degree. Truro is located almost halfway between 45°N and 46°N and about one quarter of the distance between the lines 63°W and 64°W longitude. Its latitude and longitude would be 45° 25'N, and 63° 15'W.

Since Earth is a sphere and maps are flat, map makers (cartographers) have invented different ways of drawing the round surface of Earth on a flat piece of paper. These methods are called map projections.

There are many different types of map projections, but none of them can perfectly match the sphere of Earth. Every map projection must "stretch" or "squash" the round surface to make it fit onto a flat piece of paper. As a result, no map projection can correctly show all four aspects of a map—shape, area, direction, and distance—at the same time. In drawing any ONE of these four aspects accurately, the other three become distorted or inaccurate. Each map projection has advantages and disadvantages.

1 CYLINDRICAL PROJECTIONS

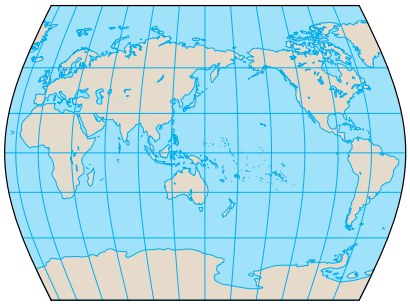


Cylindrical projections are constructed by projecting the surface of the globe or sphere (Earth) onto a cylinder that just touches the outside edges of that globe. Two examples of cylindrical projections are Mercator and Times.

Mercator (see pages 154-155 for an example of this projection)

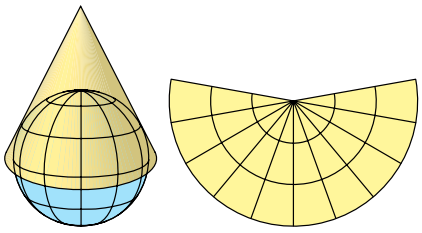
The Mercator cylindrical projection is a useful projection for areas near the equator and to about 15 degrees north or south of the equator, where distortion of shape is minimal. The projection is useful for navigation, since directions are plotted as straight lines.

Times (see pages 80-81 for an example of this projection)



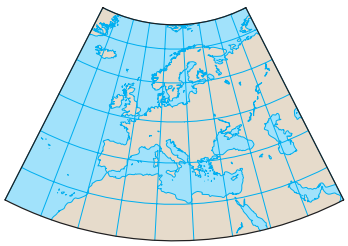
The Times projection is similar to the Mercator projection, but the meridians of longitude are slightly curved. The Times projection is most accurate halfway between the poles at 45°N and 45°S.

2 CONIC PROJECTIONS



Conic projections are constructed by projecting the surface of a globe or sphere (Earth) onto a cone that just touches the outside edges of that globe. Examples of conic projections are Albers Equal Area Conic and Chamberlin Trimetric.

Albers Equal Area Conic (see pages 136-137 for an example of this projection)

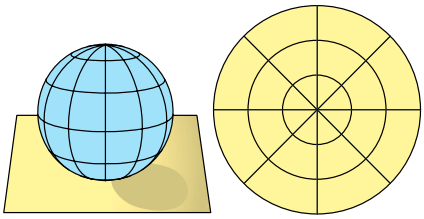


Conic projections are best suited for areas between 30° and 60° north and south of the equator when the east-west distance is greater than the north-south distance (such as Europe). The meridians are straight and spaced at equal intervals.

Chamberlin Trimetric (see page 108 for an example of this projection)

Chamberlin Trimetric is an equidistant projection. It is used to show areas with greater north-south extent than east-west extent (such as North America).

3 AZIMUTHAL PROJECTIONS

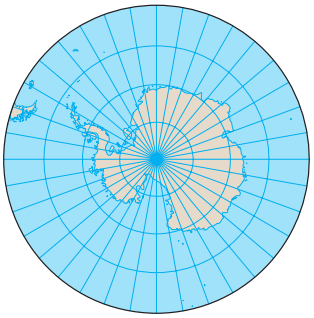


Azimuthal projections are constructed by projecting the surface of the globe or sphere (Earth) onto a flat surface that touches the globe at one point only. Some examples of azimuthal projections are Lambert Azimuthal Equal Area and Polar Stereographic.

Lambert Azimuthal Equal Area (see pages 158-159 for an example of this projection)

Lambert's projection is useful for areas that have similar east-west and north-south dimensions such as Australia.

Polar Stereographic (see page 167 for an example of this projection)



This projection is a good choice for showing travel routes from a central point because points on the map are in constant relative position and distance from the centre.