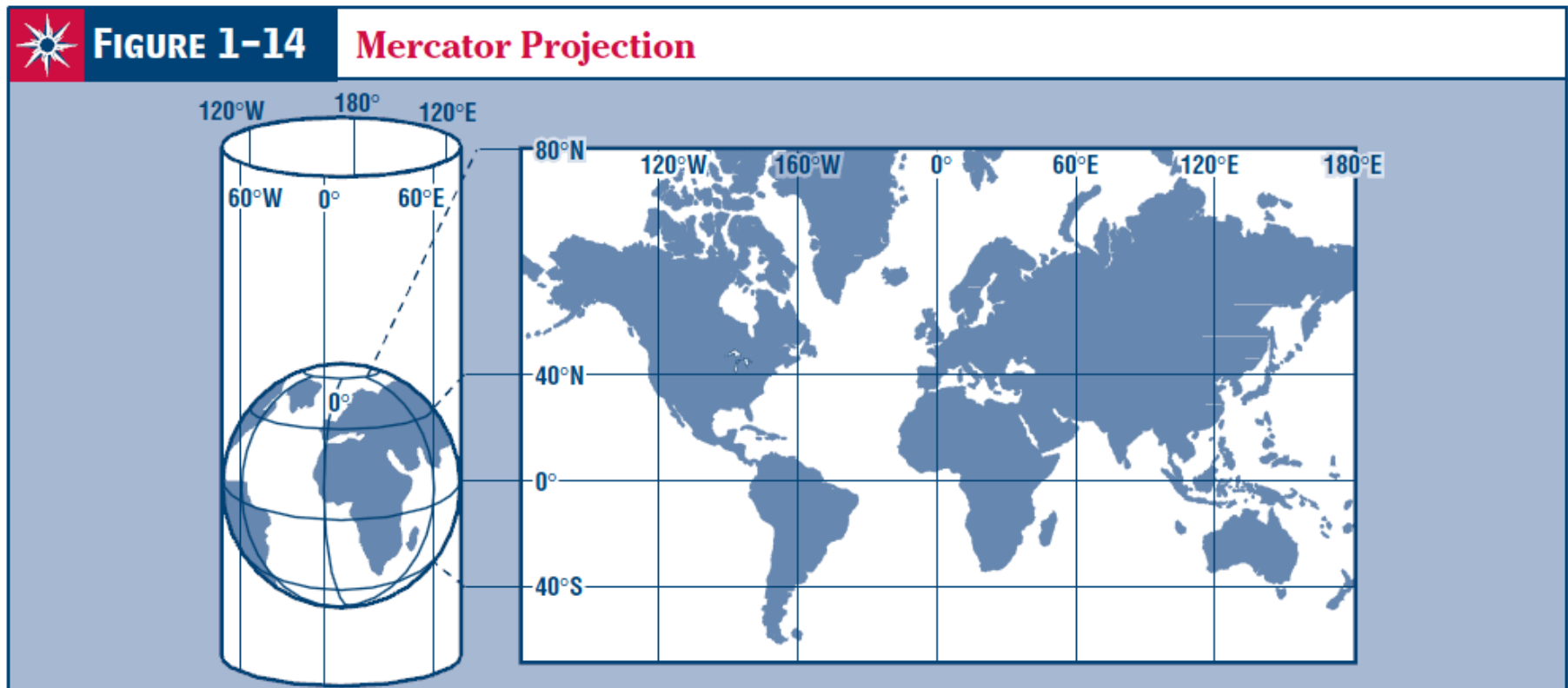


# Mercator Projections

Look at Figure 1-14 of a **Mercator projection**. This type of projection is a **cylindrical projection**. It shows how the earth would look if a piece of paper were wrapped to form a tube or cylinder around the globe. You will recall that lines of latitude are the same distance apart on a globe. But look at what happened to lines of latitude on a Mercator projection. The lines get farther apart as you move away from the Equator. This means that distances are not true. It also means that the sizes of landmasses near the North and South Poles are greatly exaggerated in size.

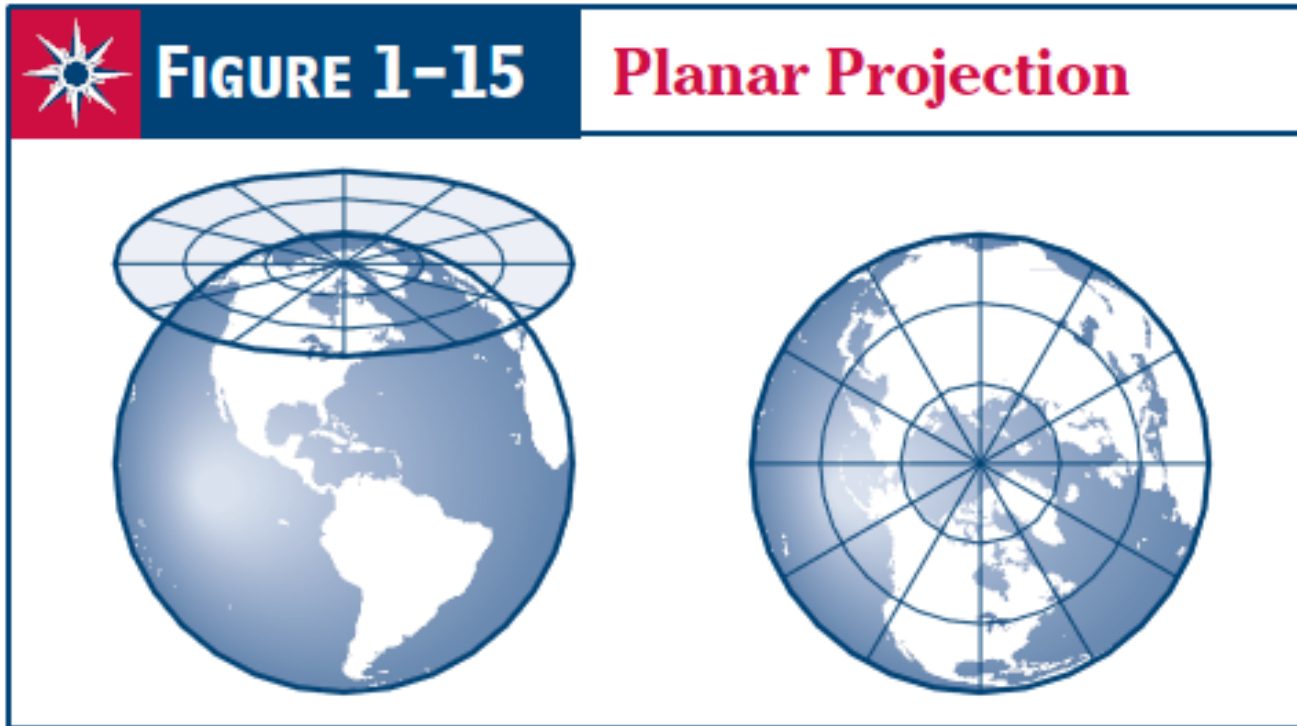


# Planar Projections

Some maps are round; they look like a flattened disk of the earth's surface. Longitude lines on these maps are straight and meet in the center of the circle. Latitude lines form a series of circles that get smaller as they reach the center of this kind of map.

This is called a **planar projection**. Also known as an *azimuthal projection*, it comes from the idea of projecting the globe onto a plane that is touching the globe at one point. A common form of planar projection is a polar projection. Polar projections show the North Pole or the South Pole as the center of the map.

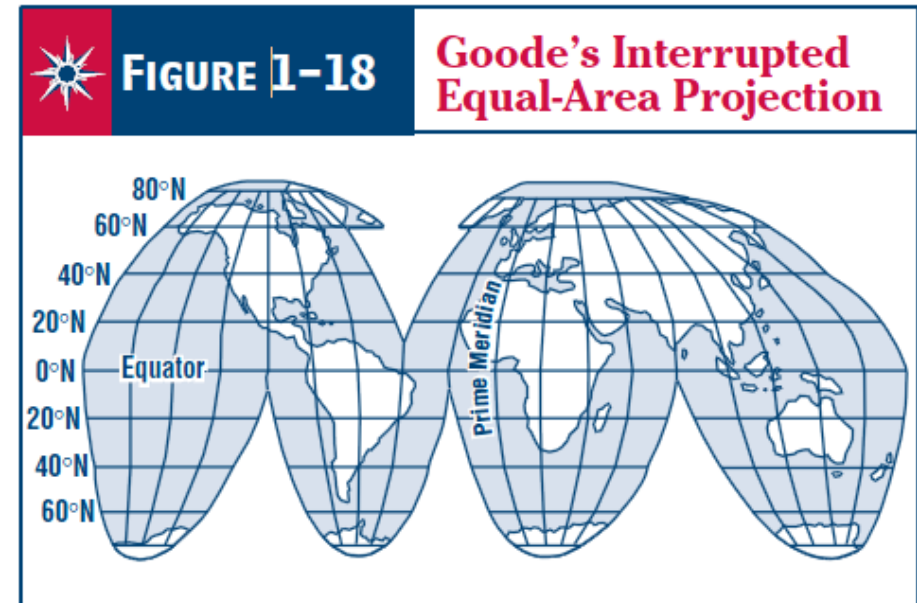
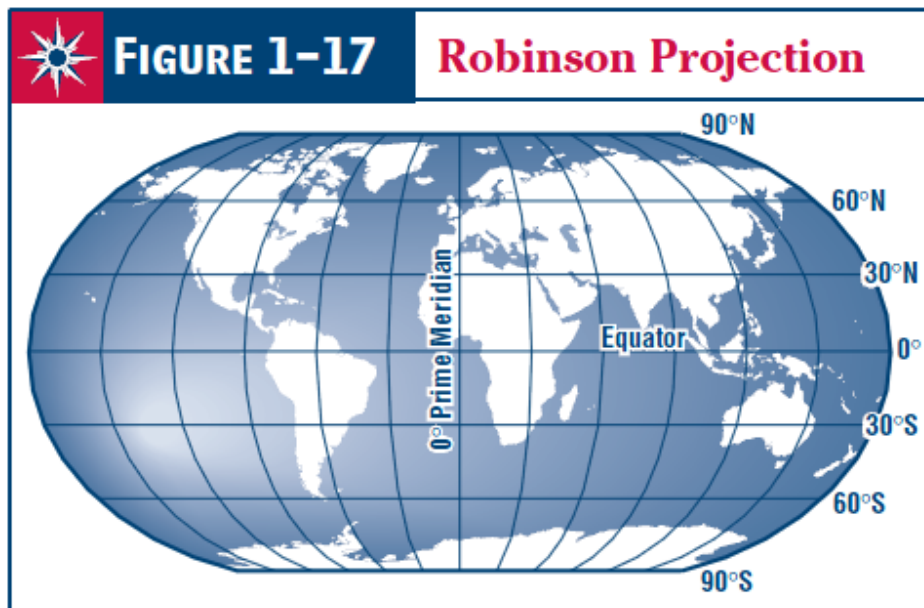
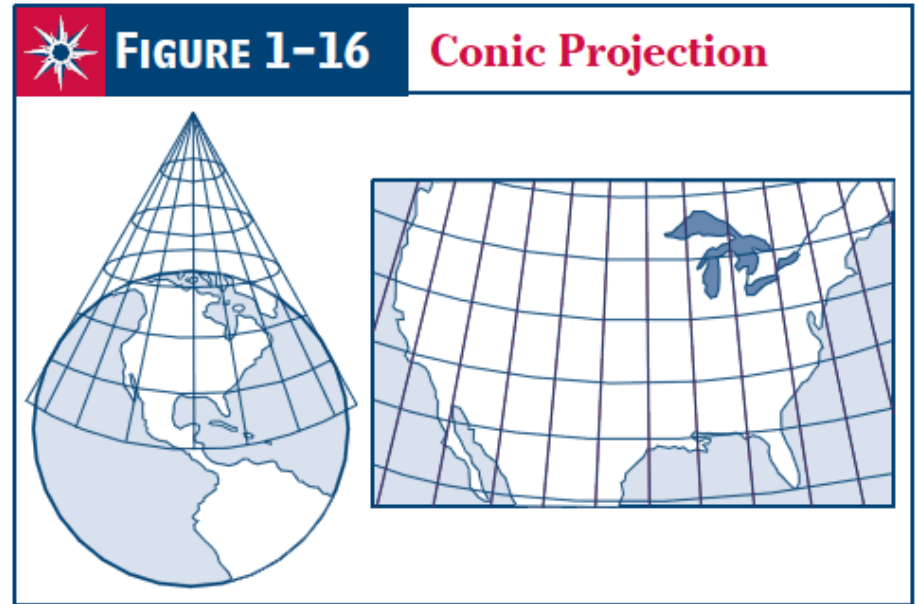
Although size and shape are distorted on planar projections, distances and directions are accurate when the line of travel passes through the center of the map.



# Conic Projections

Often you will see maps on which the longitude lines are straight and get closer together toward the north, or top of the map. Latitude lines are curved on this kind of map. It is called a **conic projection**. It comes from the idea of placing a cone over part of a globe.

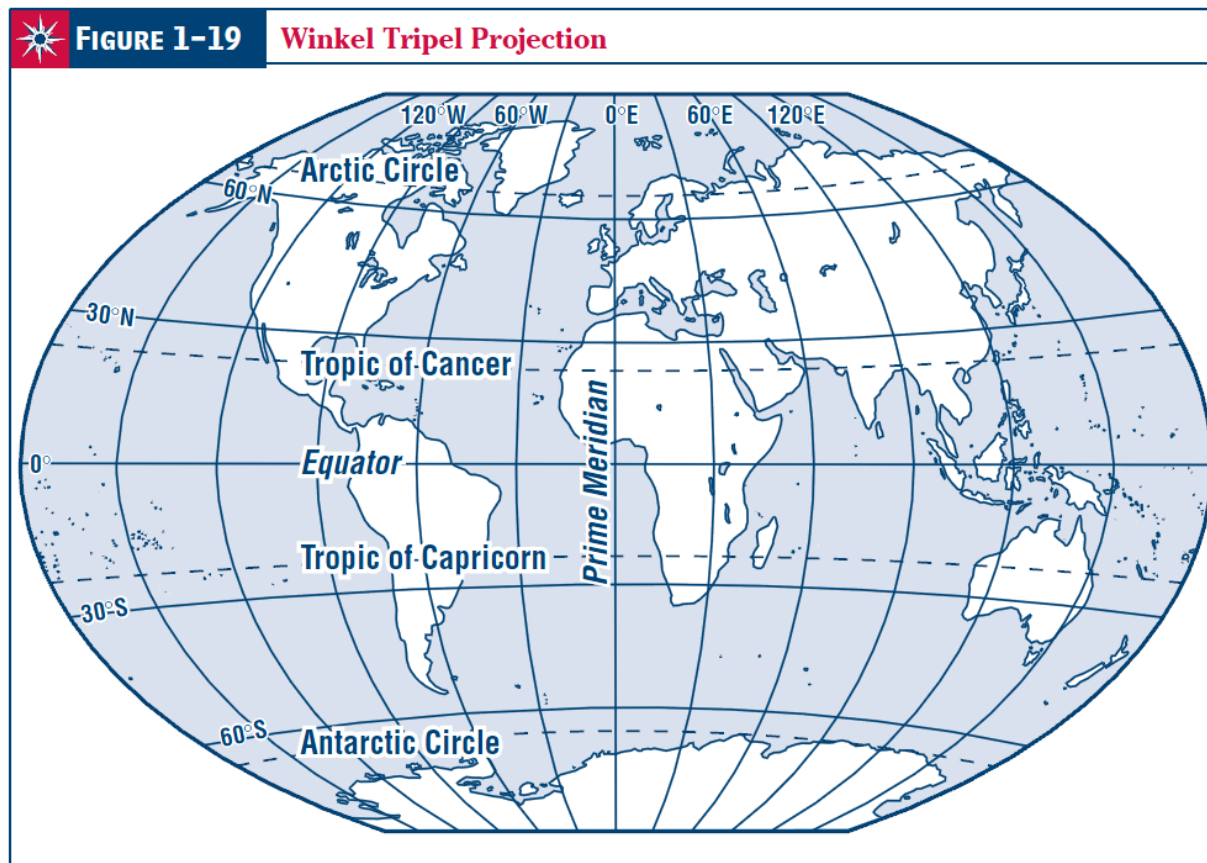
A conic projection is good for showing small areas midway between the Equator and the Poles. Size, distance, and direction are fairly accurate. There are a number of other kinds of projections that show the sizes of landmasses fairly accurately. Look at Figures 1-17 and 1-18. Notice that each has a particular shape. The **Robinson** projection shows only minor distortions in true size, distance, and shape of landmasses. **Goode's Interrupted Equal-Area** projection allows the shapes and sizes of landmasses to be depicted with a high degree of accuracy.



# Winkel Tripel Projection

The **Winkel Tripel projection**, Figure 1-19, is used in most general reference maps today. It provides a balance between the size and shape of land areas as they are shown on the map. Even the polar areas are shown with little distortion of size and shape.

Remember that no map can show direction, distance, shape, and size at the same time as accurately as a globe. Every kind of map has a special use, but none is perfect. When you look at a map, keep in mind that the sizes of landmasses may not be correct, or distances or directions may not be true. Be careful not to make judgments about the world based only on maps.



# Globe

***\*\*Use the beach ball at this station to help you visualize a globe\*\****

The most accurate world map is a globe. Like the planet Earth, a globe is shaped as a ball. When you look at a globe you can truly see the way the world looks in all of its complexity. All the countries are shown in true size relative to each other. You can see how far apart different cities are, and you can learn what time it is in another part of the world.

Why are globes so much more accurate than flat maps of the world? If you peeled the paper off a globe and tried to lay it out on a table like a map, you'd have a hard time. The map would have all sorts of gaps in it. But that's essentially what cartographers have been trying to do for hundreds of years. On some flat maps, pieces of land near the North Pole look larger than they are in reality. For example, Antarctica stretches across the bottom of a flat map when it is really a circular continent. Of course, flat maps can be very useful; you cannot put a globe in your pocket while you are traveling. But if you want to "think globally," it is obvious that a globe is what you need.

When astronauts look down at the earth from outer space, it looks like a huge blue and white marble. But thousands of years ago, before rocket boosters and space shuttles were invented; it was impossible to see what the world looked like from above. Ancient people had no way of flying so they could only look around and try to imagine the shape of their world.

*Reprinted from: "A guide to Your Globe" by Replogle Globes Inc., accessed at <http://www.1worldglobes.com/earthglobe.htm>*