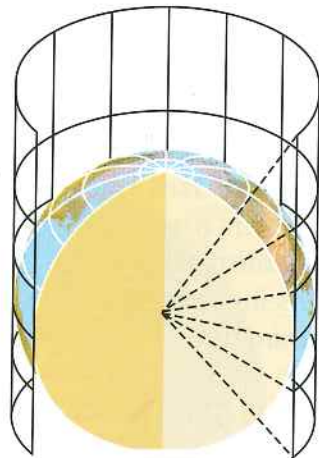


Mapmaking

A **map** is a flat diagram of all or part of the earth's surface. Mapmakers have created different ways of showing our round planet on flat maps. These different ways are called **map projections**. Because the earth is round, there is no way to show it accurately in a flat map. All flat maps are distorted in some way. Mapmakers must choose the type of map projection that is best for their purposes. Many map projections are one of three kinds: cylindrical, conic, or flat-plane.

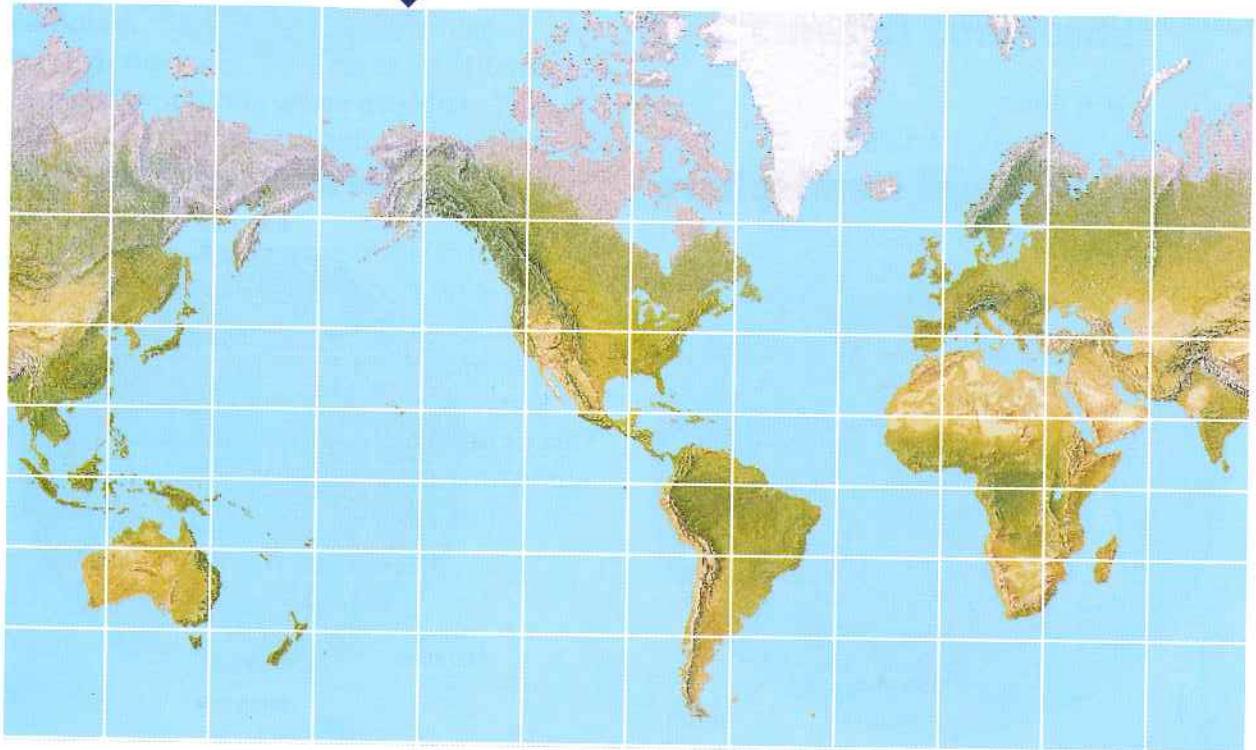


Paper cylinder

Cylindrical Projections

Cylindrical projections are based on a cylinder wrapped around the globe. The cylinder touches the globe only at the equator. The meridians are pulled apart and are parallel to each other instead of meeting at the Poles. This causes landmasses near the Poles to appear larger than they really are. The map below is a Mercator projection, one type of cylindrical projection. The Mercator projection is useful for navigators because it shows true direction and shape. However, it distorts the size of land areas near the Poles.

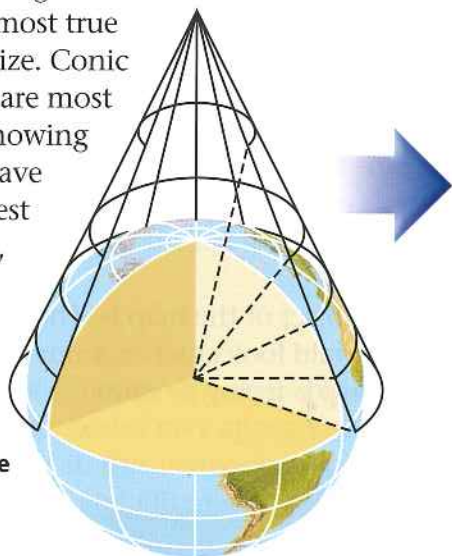
Mercator projection



Conic Projections

Conic projections are based on a cone placed over the globe. A conic projection is most accurate along the lines of latitude where it touches the globe.

It retains almost true shape and size. Conic projections are most useful for showing areas that have long east-west dimensions, such as the United States.



Paper cone

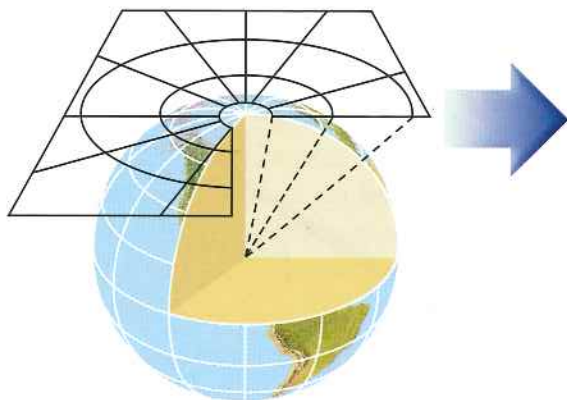


Conic projection

Flat-plane Projections

Flat-plane projections are based on a plane touching the globe at one point, such as at the North Pole or South Pole. A flat-plane projection is useful for showing true direction for airplane pilots and ship navigators. It also shows true area. However, it distorts the true shapes of land masses.

Flat plane



Flat-plane projection

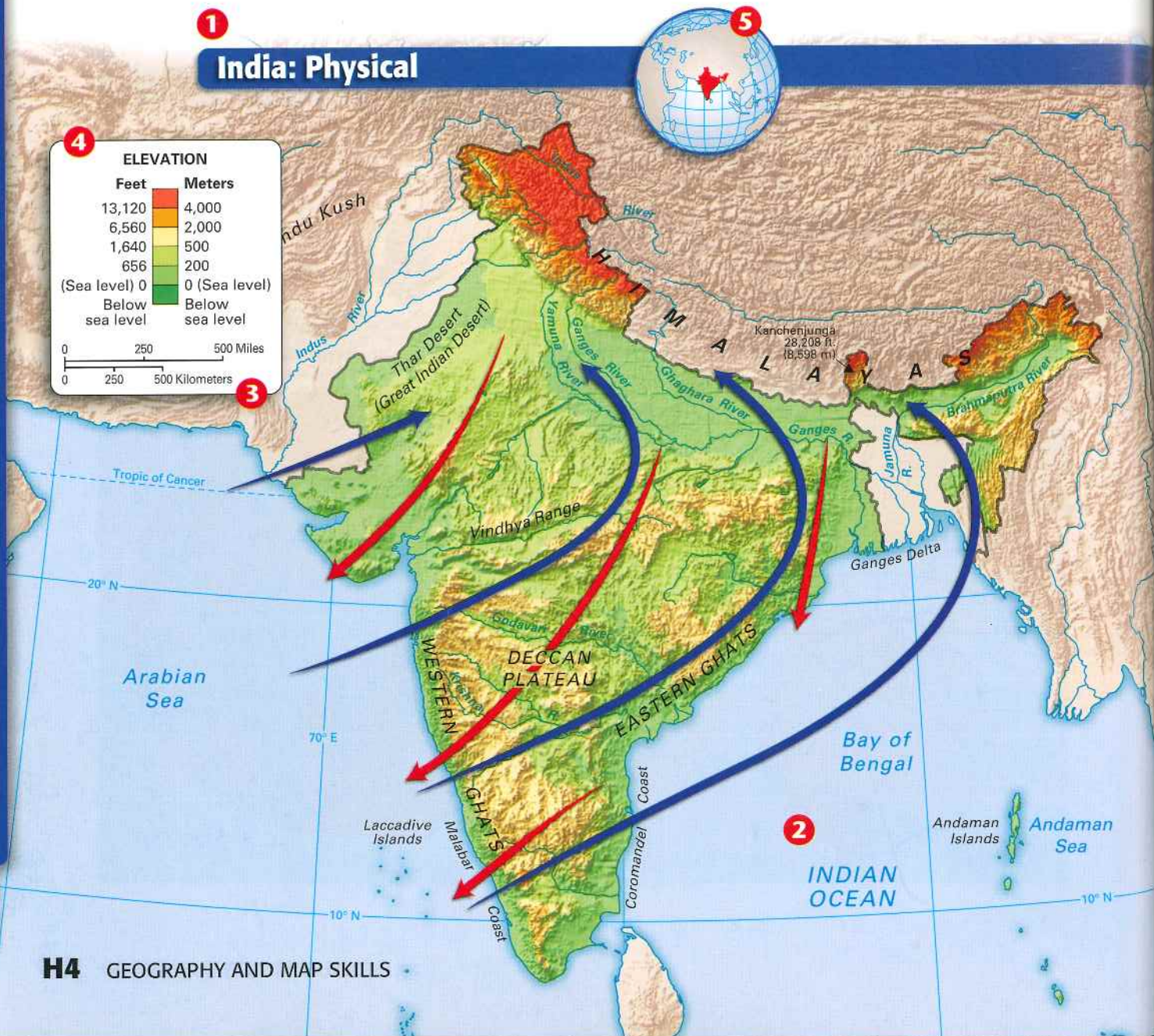


Map Essentials

Maps are like messages sent out in code. Mapmakers provide certain elements that help us translate these codes. These elements help us understand the message they are presenting about a particular part of the world. Of these elements, almost all maps have titles, directional indicators, scales, and legends. The map below has all four of these elements, plus a fifth—a locator map.

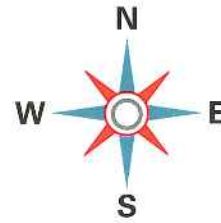
1 Title

A map's **title** shows what the subject of the map is. The map title is usually the first thing you should look at when studying a map, because it tells you what the map is trying to show.



2 Compass Rose

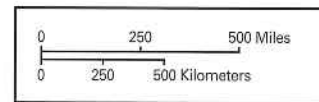
A directional indicator shows which way north, south, east, and west lie on the map. Some mapmakers use a “north arrow,” which points toward the North Pole. Remember, “north” is not always at the top of a map. The way a map is drawn and the location of directions on that map depend on the perspective of the mapmaker. Most maps in this textbook indicate direction by using a compass rose. A **compass rose** has arrows that point to all four principal directions, as shown.



3 Scale

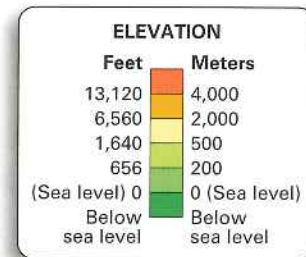
Mapmakers use scales to represent show the distances between points on a map. Scales may appear on maps in several different forms. The maps in this textbook provide a bar **scale**. Scales give distances in miles and kilometers.

To find the distance between two points on the map, place a piece of paper so that the edge connects the two points. Mark the location of each point on the paper with a line or dot. Then, compare the distance between the two dots with the map’s bar scale. The number on the top of the scale gives the distance in miles. The number on the bottom gives the distance in kilometers. Because the distances are given in large intervals, you may have to approximate the actual distance on the scale.



4 Legend

The **legend**, or key, explains what the symbols on the map represent. Point symbols are used to specify the location of things, such as cities, that do not take up much space on the map. Some legends, such as the one shown here, show colors that represent certain elevations. Other maps might have legends with symbols or colors that represent things such as roads. Legends can also show economic resources, land use, population density, and climate.



5 Locator Map

A locator map shows where in the world the area on the map is located. The area shown on the main map is shown in red on the locator map. The locator map also shows surrounding areas so the map reader can see how the information on the map relates to neighboring lands.



Working with Maps

The Atlas at the back of this textbook includes both physical and political maps. Physical maps, like the one you just saw, show the major physical features in a region. These features include things like mountain ranges, rivers, oceans, islands, deserts, and plains. Political maps show the major political features of a region, such as countries and their borders, capitals, and other important cities.

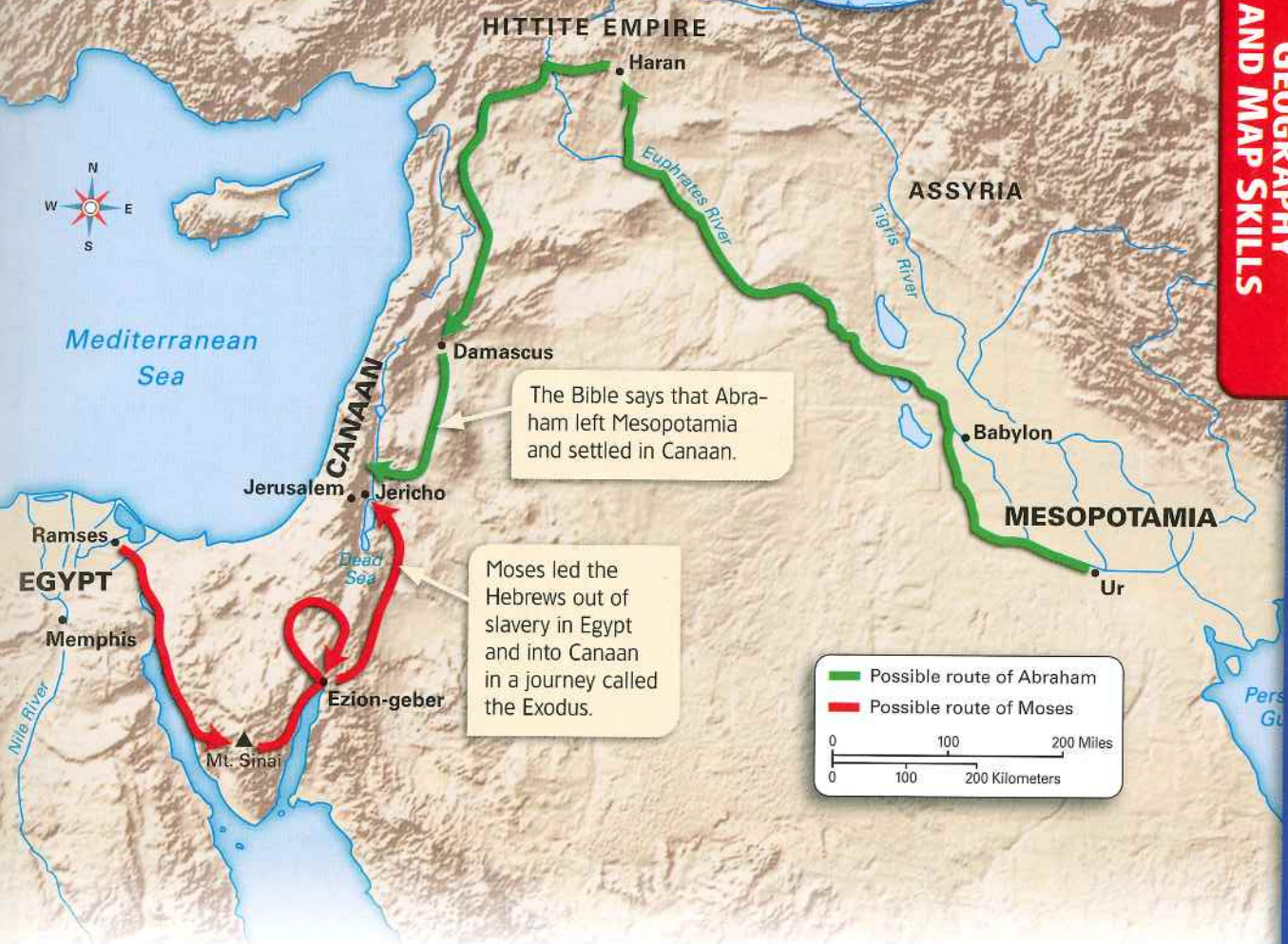
Historical Map

In this textbook, most of the maps you will study are historical maps. Historical maps, such as this one, are maps that show information about the past. This information might be which lands an empire controlled, where a certain group of people lived, what large cities were located in a region, or how a place changed over time. Often colors are used to indicate the different things on the map. Be sure to look at the map title and map legend first to see what the map is showing. What does this map show?

The Roman Republic, 270-100 BC



Possible Routes of Abraham and Moses



The Bible says that Abraham left Mesopotamia and settled in Canaan.

Moses led the Hebrews out of slavery in Egypt and into Canaan in a journey called the Exodus.

Route Map

One special type of historical map is called a route map. A route map, like the one above, shows the route, or path, that someone or something followed. Route maps can show things like trade routes, invasion routes, or the journeys and travels of people. The routes on the map are usually shown with an arrow. If more than one route is shown, several arrows of different colors may be used. What does this route map show?

The maps in this textbook will help you study and understand history. By working with these maps, you will see where important events happened, where empires rose and fell, and where people moved. In studying these maps, you will learn how geography has influenced history.