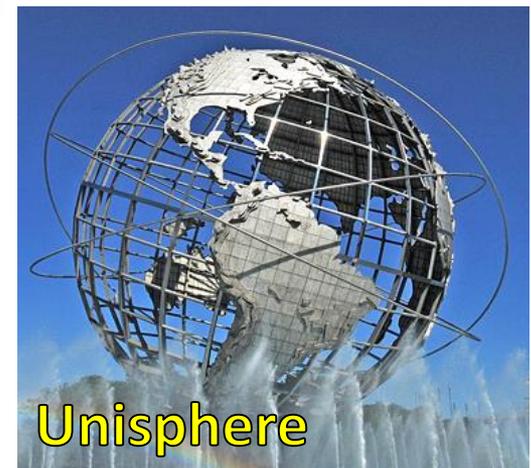
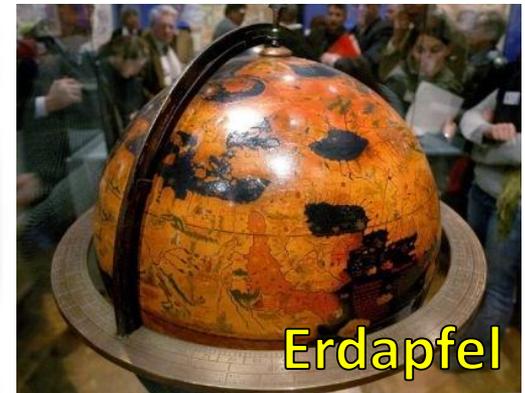


The Globe

The Globe is a three-dimensional scale model of Earth (also called **geographical globe** or **terrestrial globe**).

- The earliest known example of the terrestrial globe was constructed by **Crates of Mallus** (who lived on the territory of modern-day Turkey) in the **mid-2nd century BC**.
- The oldest surviving terrestrial globe is the **Erdapfel** (“earth apple”), created in **1492** by Martin Behaim in Nuremberg, Germany. Overlaid with a meticulously painted map, it shows an enlarged Eurasian continent, an oversized Japan and an empty ocean between Europe and Asia.
- The world’s largest geographical globe is the **Unisphere** in Queens, New York (12-story high!).

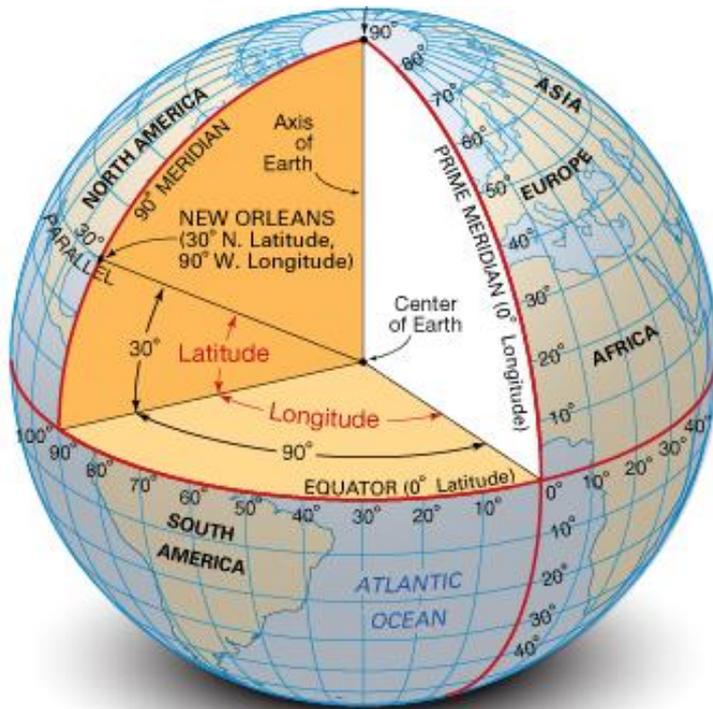


Ferdinand Magellan (1480-1521)
led the 1st expedition around the world that **proved** that Earth is round.



Coordinates on the Globe

- Every location on Earth's surface can be specified by a set of numbers and letters using a geographic coordinate system.
- A common choice of coordinates is **latitude** and **longitude**, forming the *grid system*, and **elevation**.



New Orleans, N30° W90°



Washington DC, N39° W77°



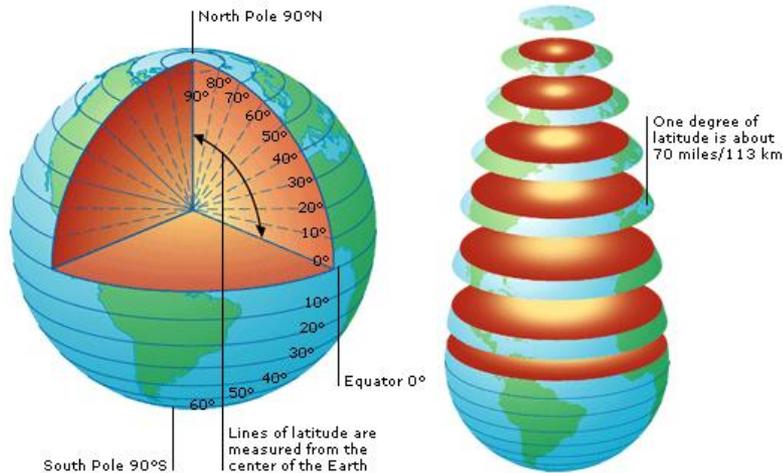
The **elevation** of a geographic location is its height above (or below) a fixed reference point, most commonly the Earth's sea level.

- The term “**elevation**” is mainly used when referring to points on the Earth's surface.
- “Altitude” is used for points above the surface (an aircraft in flight or a spacecraft in orbit).
- “**Depth**” is used for points below the surface.

Latitude and Longitude

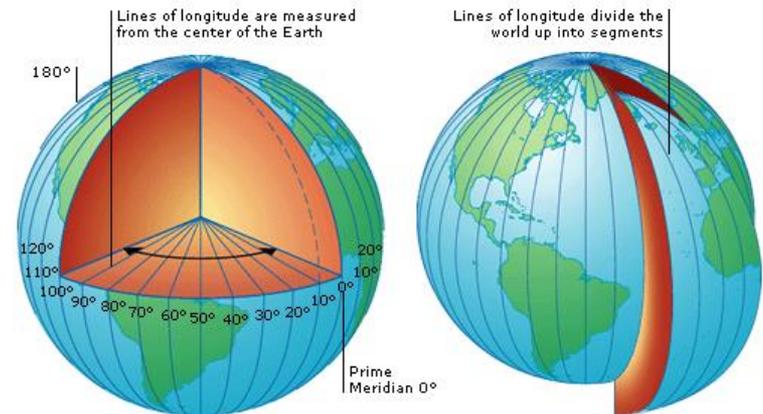
Latitude and longitude are measured in degrees ($^{\circ}$) with submultiples of minutes ($'$) and seconds ($''$).

Latitude lines (**parallels**) run horizontally. They are parallel to and an equal distance from each other.



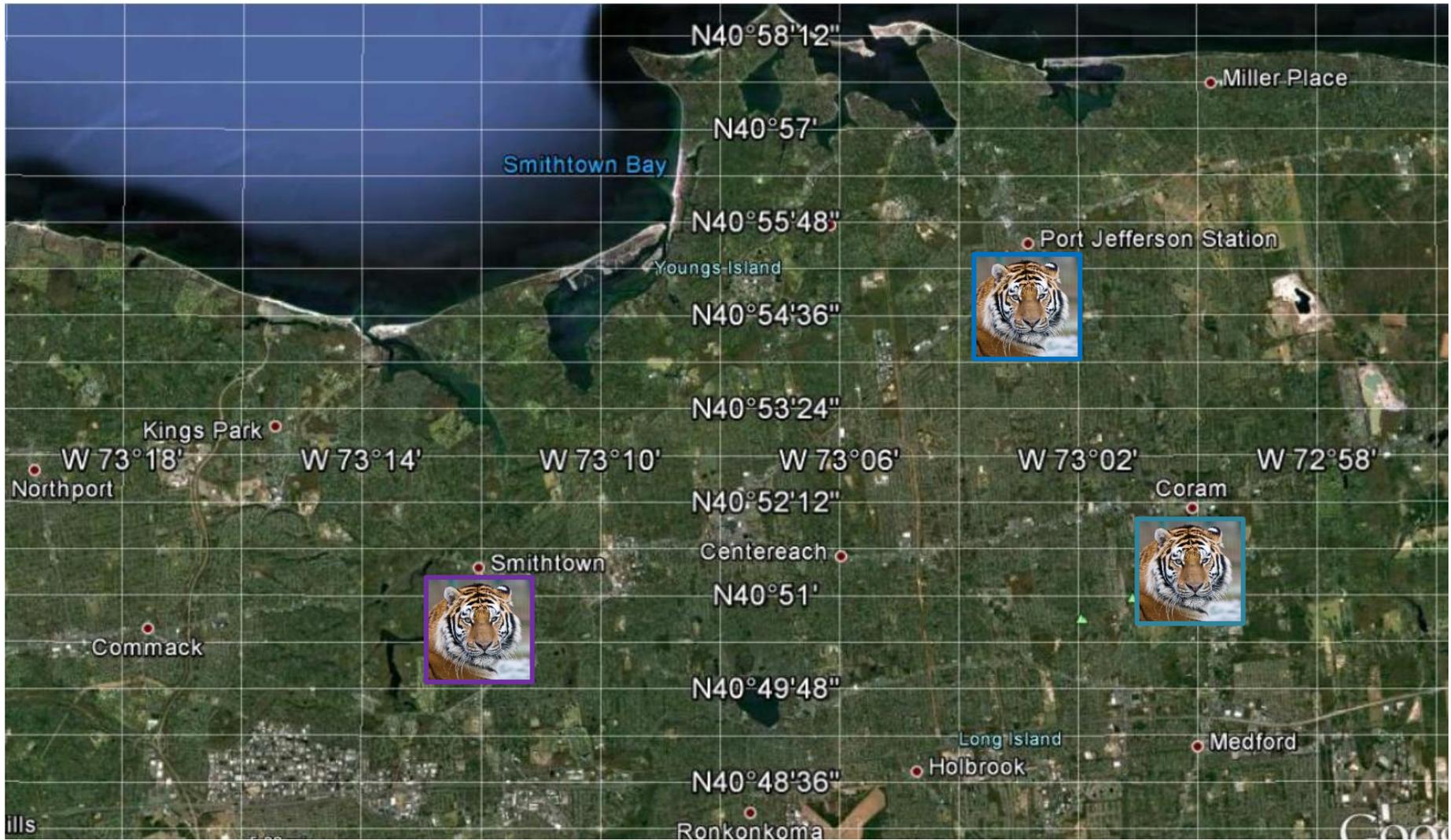
Zero degrees latitude is at the **Equator**. The latitude directions are **North (+)** and **South (-)**. North Pole is 90°N, South Pole is 90°S. Each degree of latitude corresponds to approximately 70 miles (113 km).

Longitude lines (**meridians**) run vertically, perpendicular to the Equator. They meet at the Poles and are spaced widest at the Equator.



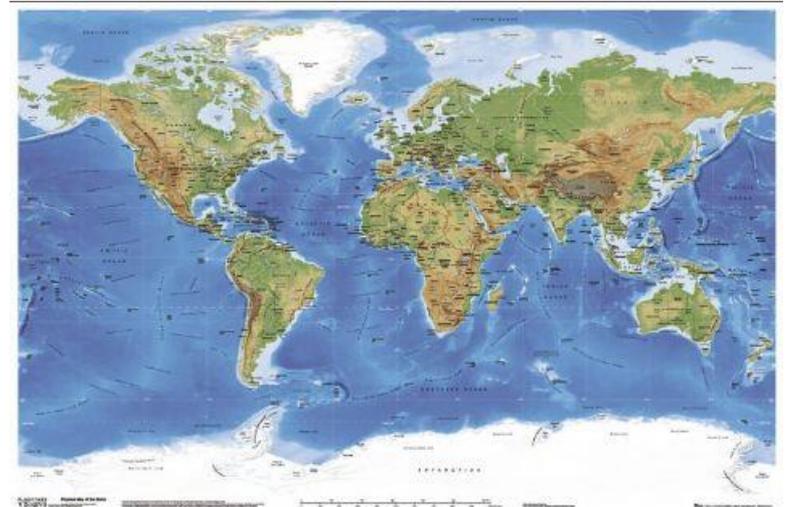
Zero degrees longitude is called the **Prime Meridian** (goes through Royal Observatory, Greenwich, UK). The longitude directions are **East (+)** and **West (-)**.

Exercise: on the third Sunday in October, a **tiger** was detected by surveillance cameras at the following locations: **N40°55'12" and W73°03'**; **N40°51'40" and W73°12'**; **N40°52'13" and W73°00'**.
Identify the towns that might have been at risk...



From Globe to Map

- A map is a graphic representation of geographic information on a flat surface.
- **Transferring** information from the spherical, or ball-shaped, surface of Earth onto a flat piece of paper is called **projection**.



A globe, a spherical model of Earth, **accurately represents** the shapes and locations of the continents.

What about a map?

How do you...

(UN)WRAP IT?