

Today: Maps

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Maps

Latitude and Longitude:

Latitude: Measures N/S ("y-axis")

- distance from equator

- measured in degrees: 0° = equator

$(-90, 0)$ = southern hemisphere, $(0, 90)$ = Northern hem.

Longitude: - - - E/W ("x-axis")

- distance from prime ~~meridian~~ meridian

- measured in degrees, prime meridian = 0°

$(-180, 0)$ = eastern hem. $(0, 180)$ = western hem.

Map Projections

Earth is a 3-D object, but maps are 2-D objects.

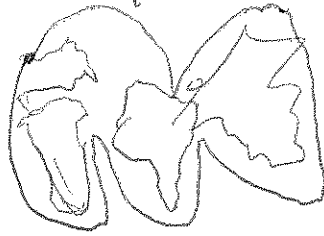
Map Projections:

systematic transformation of the coordinates (latitude and longitude) on the surface of a sphere (the earth) in to ~~coordinates~~ coordinates on a (usually) 2-D plane

* All projections will distort the Earth's surface in some way

Common Projections:

Mercator, Robinson, Conic, cylindrical, planar, interrupted



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Maps in R (and other software/tools) with Shapefiles

Shapefiles:

* Data objects that specify the

boundaries and features of geographic regions

* "spatial polygons"

* Can contain lines, points, polygons, etc. representing any geographic feature.

* GIS: geographical information system → shapefiles available for countries, states, counties, tracts, etc.

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