MAP PROJECTIONS



Methods of presenting the curved surface of the Earth on a flat map.

MAP PROJECTIONS

On your notebook paper, create a graphic organizer as illustrated below...Title it MAP PROJECTIONS

Map Name	Illustration	Strength	Weakness	Used For??

Are all Maps created equally?

- Imagine trying to flatten out a globe; you would have to stretch it here, compress it there.
- Because of this, it is quite common for sizes, shapes, and even distances to be misrepresented in the transition from three dimensions to two.
- Large distortion if you are looking at a hemisphere or the entire world.
- Smaller distortion/inaccuracies At the scale of a city or even a small country,

Mercator Projection

Cylinder shape

- Meridians stretched apart & parallel to each other instead of meeting at the poles.
- Landmasses at high latitudes appears LARGER
- Landmasses at lower
 latitudes appears relatively
 SMALLER.



Conic Projection

- Designed as if a cone had been placed over the globe.
- □ Arctic regions portrayed accurately.
- Further you get from the top of the cone, the more distorted sizes and distances become.
- □ Great for aeronautical plotting latitudes are more accurate.



Flat Plane/Azumithal Projection

- Distances measured from the center are accurate.
- Distortion <u>increases</u> as you get further away from the center point.
- Used by airline pilots
 & ship navigators to find the shortest distance between 2 places.



Equal Area Map Projection

- □ An interrupted view of the globe.
- Land masses are proportional giving the correct perspective of size.
- Not usable for navigation longitude & latitude are stretched apart in order to conform to sizes.



Gall-Peters Projection

- Landmasses in this projection are kept accurate and in proportion. Continents are shown correctly relative to the other continents.
- □ Most socially-sensitive projection?
- □ Shapes & distances greatly distorted.



Peters vs. Mercator





Robinson Projection

- Projection that seeks to create a compromise between size, shape, and distance distortions.
- All variables are shown fairly accurately, but not finely enough to be useful in navigation. Because of this, it is only really seen in textbooks and classrooms.



Why the multiple types of projection?

- Each map projection has both its own unique advantages and disadvantages.
- Whereas some maps are great for navigation, they are not great for educational purposes, nor are they the most effective for business uses.
- Cartographers face challenges in making maps accurate, whether it is in sizes, distances, or shapes.
- Distortion caused by the shift from three dimensions to two cause these difficulties.