

Basics of Map Projection

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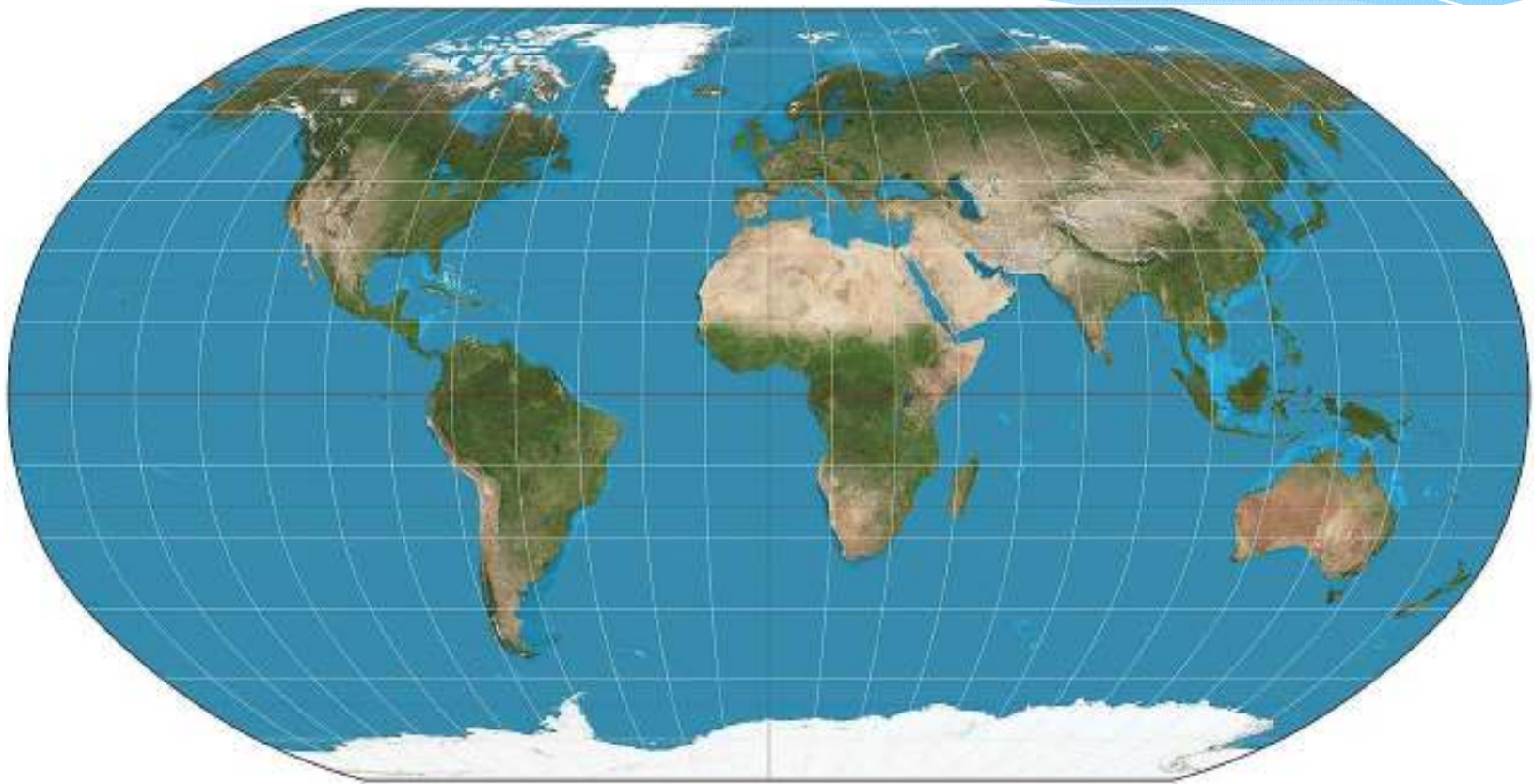
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Definition of Map Projection

Map projection is the method of transferring the graticule of latitude and longitude on a plane surface. It can also be defined as the transformation of spherical network of parallels and meridians on a plane surface.

The World Map



Source: Internet

MAP PROJECTIONS

MERCATOR



GALL-PETERS



GOODE-HOMOLOSINE



WATERMELON

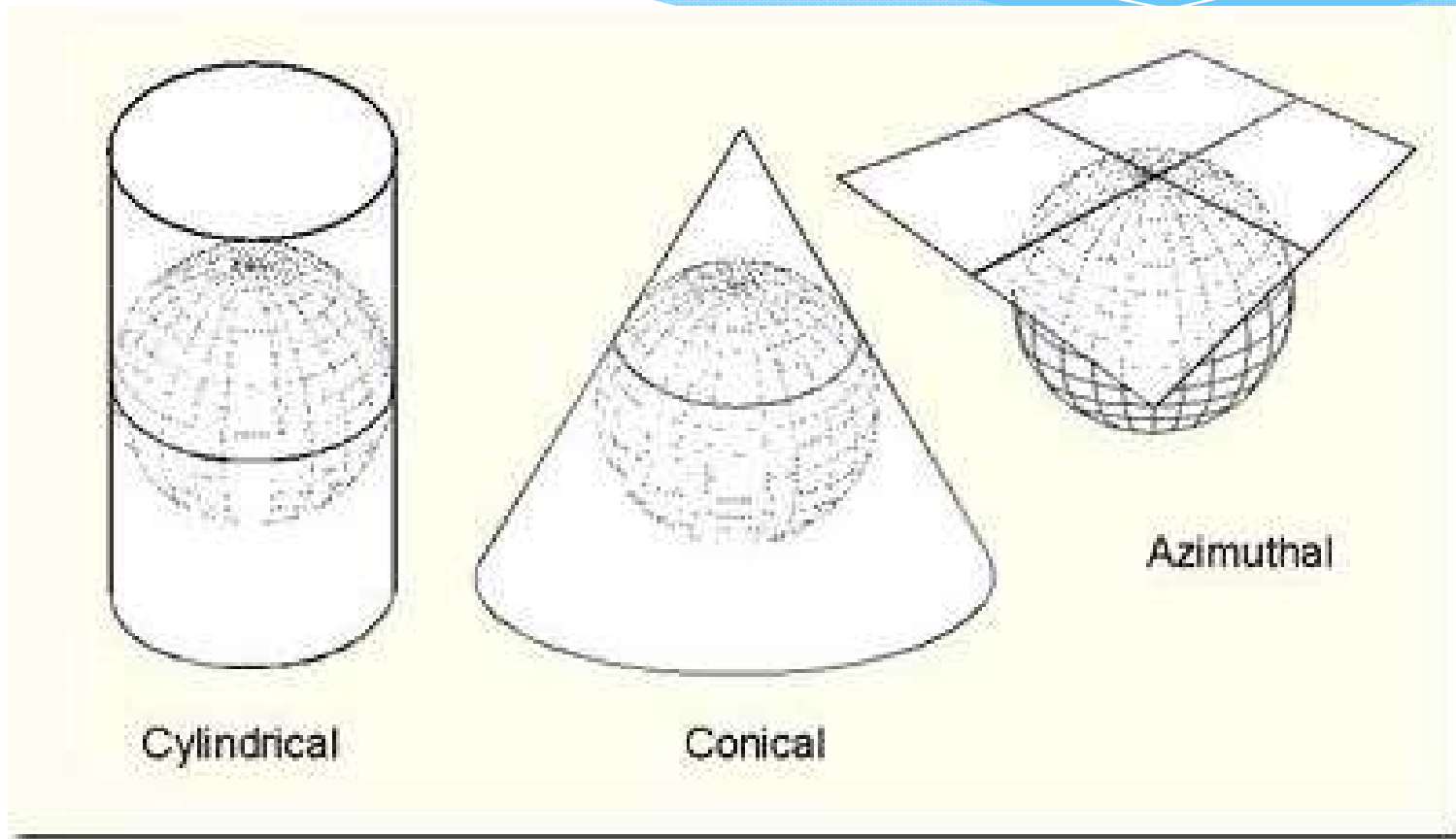


ALBERS

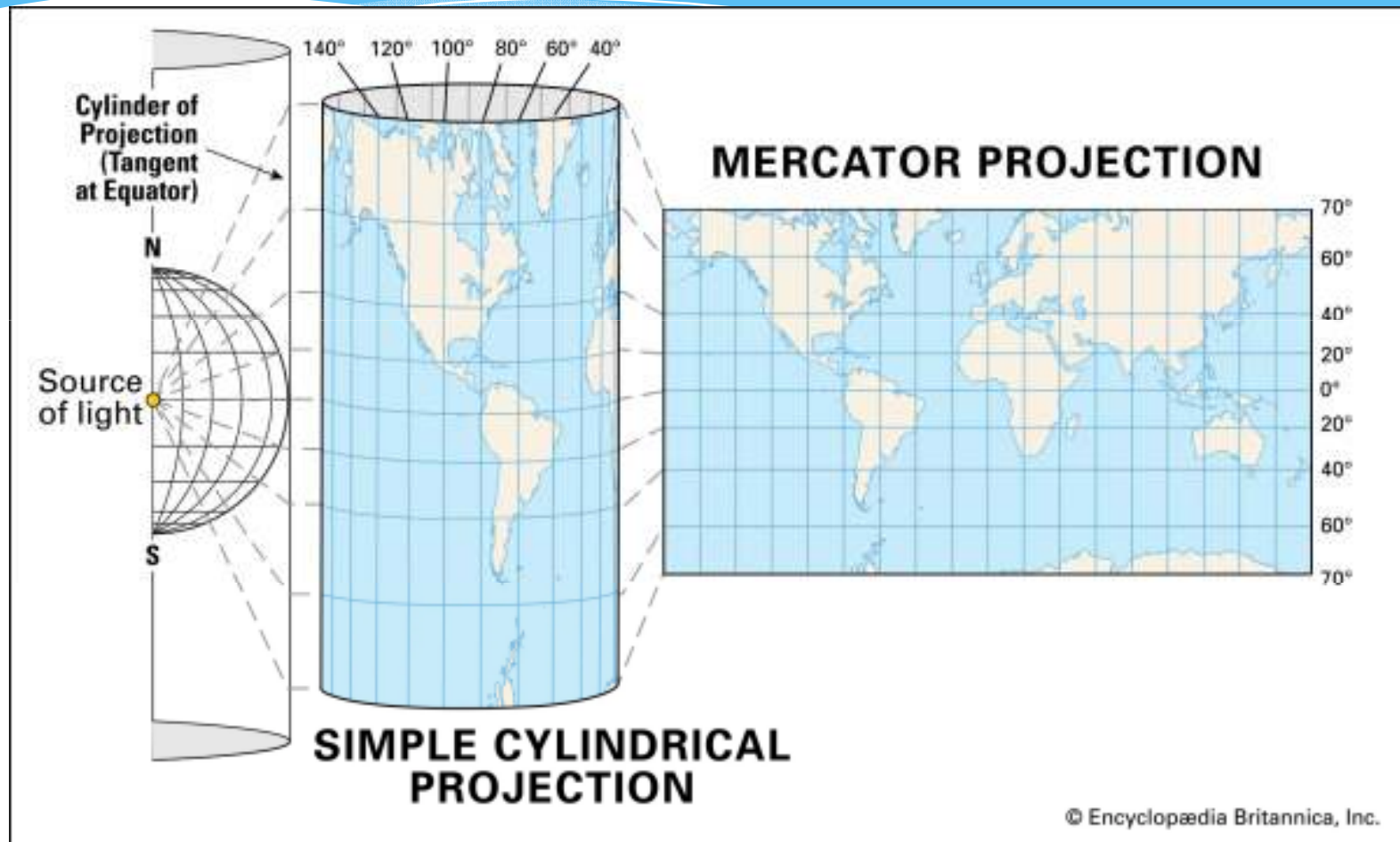


ROBINSON

Developable Surface



Technique at a glance



Metric properties of maps

Many properties can be measured on the Earth's surface independently of its geography:

- * Area
- * Shape
- * Direction
- * Bearing
- * Distance

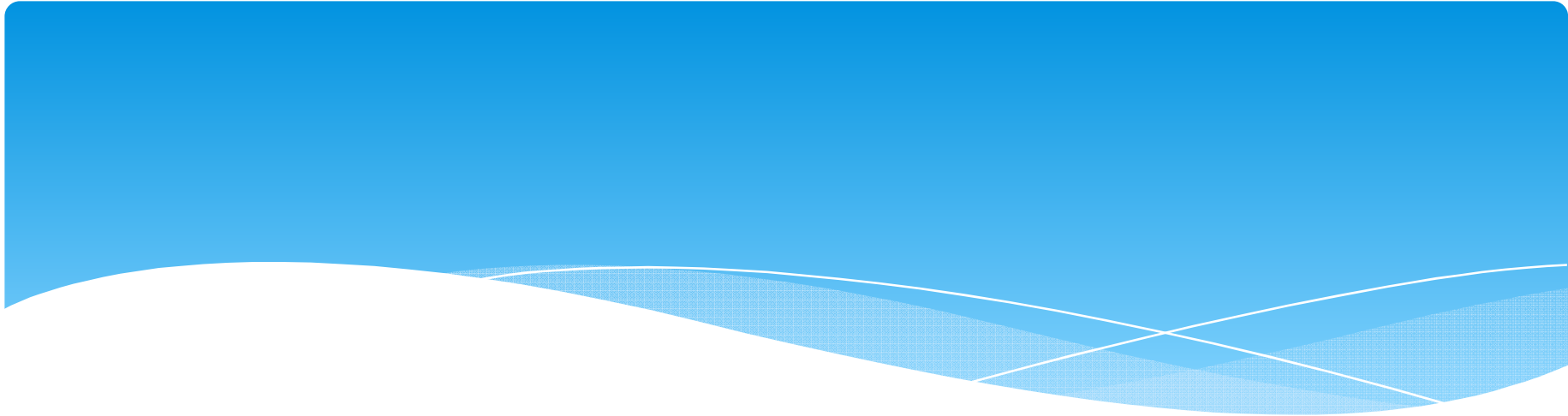
Design and construction

- * Selection of a model for the shape of the Earth or planetary body (usually choosing between a sphere or ellipsoid). Because the Earth's actual shape is irregular, information is lost in this step.
- * Transformation of geographic coordinates (longitude and latitude) to Cartesian (x,y) or polar (r, θ) plane coordinates. In large-scale maps, Cartesian coordinates normally have a simple relation to eastings and northings defined as a grid superimposed on the projection. In small-scale maps, eastings and northings are not meaningful, and grids are not superimposed.

Classification of Map Projection

Source: P. Roy (1988)

Criteria	Elements/Controls	Classes/Sub-classes								
Exogenetic	Datum Surface	<ol style="list-style-type: none"> 1. Direct Projection 2. Double Projection 3. Triple Projection 								
	Plane of Projection	<table border="1"> <thead> <tr> <th>1st Order</th> <th>2nd Order</th> <th>3rd Order</th> </tr> </thead> <tbody> <tr> <td> <ol style="list-style-type: none"> 1. Planar 2. Conical 3. Cylindrical </td> <td> <ol style="list-style-type: none"> a. Tangent b. Secant c. Poly-superficial </td> <td> <ol style="list-style-type: none"> (i) Normal (ii) Transverse (iii) Oblique </td> </tr> </tbody> </table>	1st Order	2nd Order	3rd Order	<ol style="list-style-type: none"> 1. Planar 2. Conical 3. Cylindrical 	<ol style="list-style-type: none"> a. Tangent b. Secant c. Poly-superficial 	<ol style="list-style-type: none"> (i) Normal (ii) Transverse (iii) Oblique 		
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Method of Projection	<ol style="list-style-type: none"> 1. Perspective 2. Semi-perspective 3. Non-perspective 4. Conventional 									
Endogenetic	Properties	<ol style="list-style-type: none"> 1. Homolographic 2. Orthomorphic 3. Azimuthal 4. Equidistant 								
	Appearance of the parallels and meridians	<ol style="list-style-type: none"> 1. Both parallels and meridians straight. 2. Parallels straight and meridians curves. 3. Parallels curves and meridians straight. 4. Both parallels and meridians curves. 5. Parallels concentric circles and meridians radiating straight lines. 6. Parallels concentric circles and meridians curves. 7. Parallels irregular curves and meridians radiating straight lines. 8. Both parallels and meridians curves. 								



Thank You!