Geographic Coordinates

Latitude, longitude and elevation constitute geographic coordinates for any location on or above the Earth. These coordinates can be obtained from a map or measured using a GPS receiver.

Helper's Guide

How to Prepare

Answers to Before you start exercise:

City	Latitude	Longitude
Saint Paul, MN	40°48' N	96°40' W
Denver, CO	38°53' N	77°01' W
Lincoln, NE	38°35' N	121°30' W
Sacramento, CA	39°09' N	104°59' W
Washington, DC	44°57' N	93°05' W

Set up the GPS receivers to show Satellite Page and display longitude/latitude geographic coordinates in degrees and minutes and to show elevation in meters or feet. Make sure each receiver to be used in fully charges and is running outside before the actual exercise begins.

Need to Emphasize

- Every location on Earth has a unique pair of coordinates (longitude and latitude)
- Elevation is the third geographic coordinate
- Longitude and latitude are angular measurements when elevation is in linear units
- In US longitude increased when one moves to West, not East, and therefore each longitude should be assigned a negative sign
- Negative sigh convention for western longitudes and southern latitudes is important for mapping.

Related Links

- http://geography.about.com/cs/latitudelongitude/a/latlong.htm
- http://en.wikipedia.org/wiki/Geographic_coordinate_system
- http://www.esri.com/news/arcuser/0703/geoid1of3.html

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