Longitude and Latitude Exercise - Lesson Components

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Geospatial Exercise (Bootcamp & Family Night)  
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Lesson Components

- Longitude vs. Latitude
- Reading an Aeronautical Chart
- Grid Exercise
- How GPS Receivers Work

Latitude and Longitude
- A system of coordinates used in designating the location of places on earth
- If you know the coordinates, you can use a map to locate any point on earth

Lines of Latitude
- On a globe of the Earth, lines of latitude (parallels) are circles of different size.
- The longest is the equator, whose latitude is zero, while at the poles--at latitudes 90° north and 90° south (or -90°) the circles shrink to a point.

Lines of Latitudes
- Latitude ranges from 0 degrees to 90 degrees
- It is either North or South of the equator
- Is Winnebago North or South of the equator?

Lines of Longitude
- On the globe, lines of constant longitude (meridians) extend from pole to pole, like the segment boundaries on a peeled orange.
- Every meridian must cross the equator. Since the equator is a circle, we can divide it--like any circle--into 360 degrees.

Lines of Longitude
- Longitude ranges from 0 degrees to 180 degrees
- It is either East or West of the Prime Meridian
- Is Winnebago East or West of the Prime Meridian?
Degrees, Minutes, and Seconds
- Fractions of degrees are broken down into minutes and seconds
- Each minute represents 1/60th of a degree
- Each second represents 1/60th of a minute
- This allows the assignment of a precise numerical location to any place on earth

Omaha Sectional Chart
Can you find latitude and longitude?

Reading an Aeronautical Chart
- Sectional Aeronautical Charts provide visual navigation of slow to medium speed aircraft.
- The topographic information consists of visual checkpoints used for flight under visual flight rules.
- The checkpoints include populated places, drainage patterns, roads, railroads, and other distinctive landmarks.
- The aeronautical information on Sectional Charts includes visual and radio aids to navigation, airports, controlled airspace, restricted areas, obstructions, and related data.

Aeronautical Symbols
Airport Data
Air Navigation Lights
Radio Facilities

- Can you identify the 6 symbols in the red circles?

Grid Exercise

Find your current location and express as latitude and longitude

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