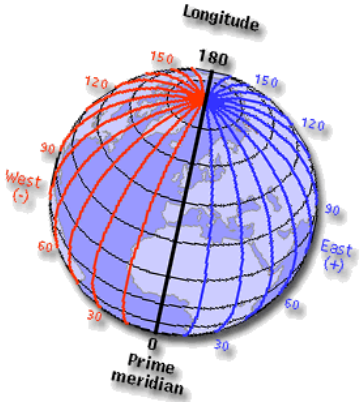
Longitude Clues Worksheet 2014

Using Sunrise Clues to Estimate Longitude

Mystery Class #: _____



1. Locate Greenwich, England on the map.
Greenwich, England is on the prime meridian at 0 degrees longitude. On the morning of March 20, 2014, the sun will rise in Greenwich at 6:03 UT.

- Mark the location of Greenwich on the map.
- Write the time of sunrise at Greenwich beside the prime meridian.

2. Record sunrise time for the Mystery Class.
Look up the sunrise time for this Mystery Class on the "Sunrise on the Equinox" table. Remember: Universal Time includes the time *and date in Greenwich*.

Place of Sunrise	Greenwich, England	Mystery Class #: ___
Time of Sunrise (UT)	6:03 March 20	

3. Is the Mystery Class east or west of Greenwich?
The Earth spins to the east. A location with sunrise time *before* Greenwich is *east* of Greenwich; a location with sunrise *after* Greenwich is *west* of Greenwich. Sunrise at this Mystery Class occurred _____ (before/after) sunrise at Greenwich, so I know this Mystery Class is _____ (east/west) of Greenwich.

4. How much time between sunrise at Greenwich and the Mystery site?
The length of time between sunrise at this Mystery Class and sunrise at Greenwich is ____ hours and ____ minutes. (Caution: This may not be a simple subtraction or addition equation. Pay attention to the date of the sunrise time too.)

5. For how many minutes does the Earth spin between sunrise times?
The Earth will spin for ____ minutes between the time sun rises at this Mystery Class location and the time the sun rises at Greenwich. (Clue: convert your answer in #4 above to minutes.)

6. How many degrees longitude from Greenwich?
The Earth spins 1 degree longitude every 4 minutes. I estimate the longitude of this Mystery Class to be: ____ degrees ____ (east/west) of Greenwich.