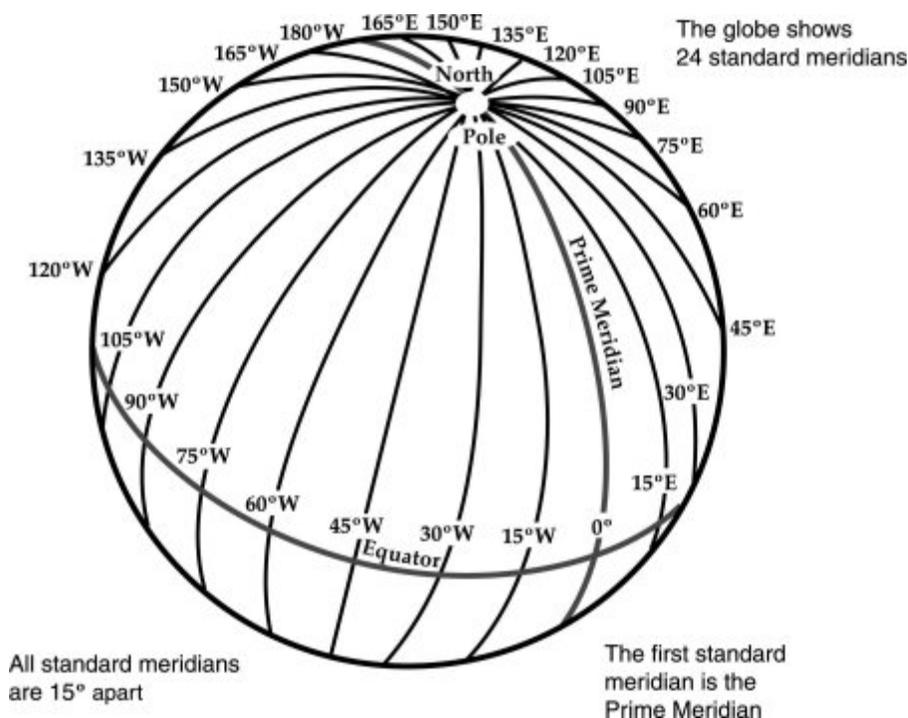


## Globe Lesson 12 - Global Time - Grade 6+

### High Noon

Until 100 year ago, communities set their own time using the position of the sun in the sky. "High noon" or twelve o'clock was the time when the sun was at its highest point in the sky. Because the Earth rotates or spins on its axis toward the east, every place to the east or west has a different "high noon." Only places locate directly north or south of each other has the same "high noon."

A system of 24 standard meridians is now used. These standard meridians are used to establish standard time zones. The system uses 24 standard meridians. The standard meridians are 15° degrees apart, beginning with the Prime Meridian (0 longitude). On the globe every 15° line of longitude (standard meridian) is labeled.



The system of standard meridian is based on two facts:

1. The Earth completes a total rotation on its axis once every twenty-four hours.
2. There are 360° of longitude all the way around the Earth.

The Earth turns 360° in 24 hours, or at a rate of 15° an hour. (360° in a day, 24 hours =

15° an hour.)

Each standard meridian is the center of a time zone. Each time zone is 15° wide. The Greenwich Time Zone, for example, is centered on the Prime Meridian. This time zone is supposed to be 15° wide and extends from 7½° W to 7½°E. However, the boundaries of standard time don't exactly run along meridians. The boundaries have been changed to fit the borders of countries and even smaller areas.

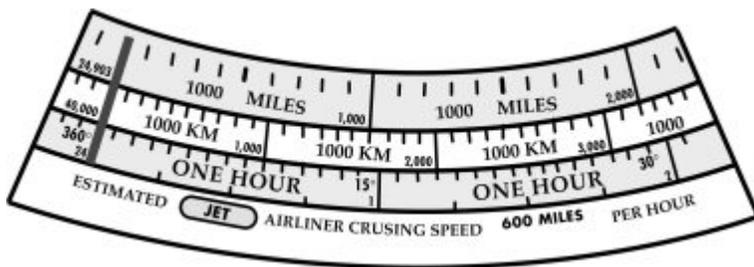


Figure 1

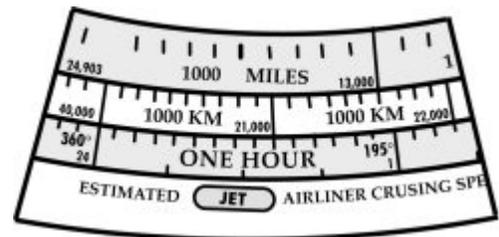


Figure 2

### A.M. and P.M.

Look at Figure 1 on the drawing above. This is a drawing of part of the scale that appears on the Horizon Ring Mounting of the globe. There is a heavily shaded line in this drawing. This line represents the red line you will find on the Horizon Ring Mounting. This red line represents midnight. Find and circle this red line on your globe mounting.

To the right of the red line you can see the ring has been divided into one-hour sections. In each section there is small number, which shows the time of day in relation to midnight. On the ring of your globe, circle these small numbers from 1 to 12. All times listed from 1:00 to 12:00 are A.M. or before noon.

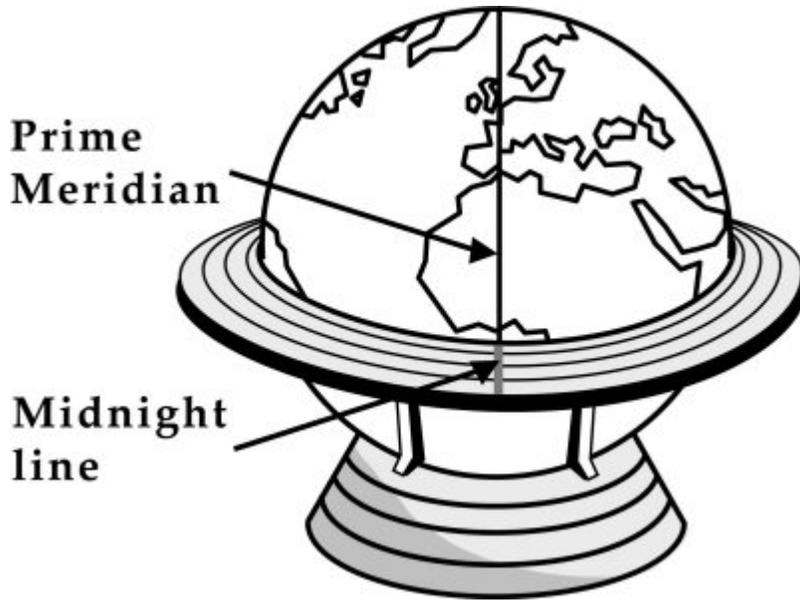
Look now at Figure 2. This figure shows how the time is listed in the P.M. or afternoon. The number 13 means 1:00 PM or one o'clock in the afternoon. 14 would mean 2:00 P.M. continuing to 24, which is midnight. The red line is 24 hours or midnight. The armed forces and ships at sea use the 24-hour clock to avoid confusion and to eliminate

the necessity for listing AM or PM. On the ring of your globe, circle the hours numbers 13 through 24.

### **What To Do Next**

By using the standard meridians and the hour scale on the Horizon Ring we can establish global time. Here's how:

1. Determine a line of longitude you want to use. Let's say the Prime Meridian is the line of longitude you will use. Draw a line along the Prime Meridian from the North Pole to the Equator.
2. Determine what time it is at that line of longitude. Let's say it is 12:00 midnight at the Prime Meridian. Circle the red line, 12:00 midnight, on the Horizon Ring.
3. Keep the globe in the Horizon Ring with the North Pole pointing toward the ceiling. Rotate the globe so the line drawn on the Prime Meridian is even with the circle you draw around 12:00 midnight on the horizon.



The Prime Meridian is even with the Midnight Line on the Horizon Ring

All the locations along the Prime Meridian are at midnight. Find the following locations and determine the time at each of them if it is midnight at the Prime Meridian.

- |                                     |                                 |
|-------------------------------------|---------------------------------|
| 1. _____ Philadelphia, Pennsylvania | 4. _____ Kyoto, Japan           |
| 2. _____ Alexandria, Egypt          | 5. _____ London, United Kingdom |
| 3. _____ Accra, Ghana               | 6. _____ Denver, Colorado       |

Use your globe to answer these questions. If it were 6:00 AM at the 75°W meridian lines, what time would it be in each location? Write the correct time in the blank next to each location.

- |                                   |                                |
|-----------------------------------|--------------------------------|
| A. _____ in Chicago at 90° W      | E. _____ in Greenland at 45° W |
| B. _____ in Denver at 105° W      | F. _____ in Azores at 30° W    |
| C. _____ in Los Angeles at 120° W | G. _____ in Iceland at 15° W   |
| D. _____ in Nova Scotia at 60° W  | H. _____ in London at 0°       |