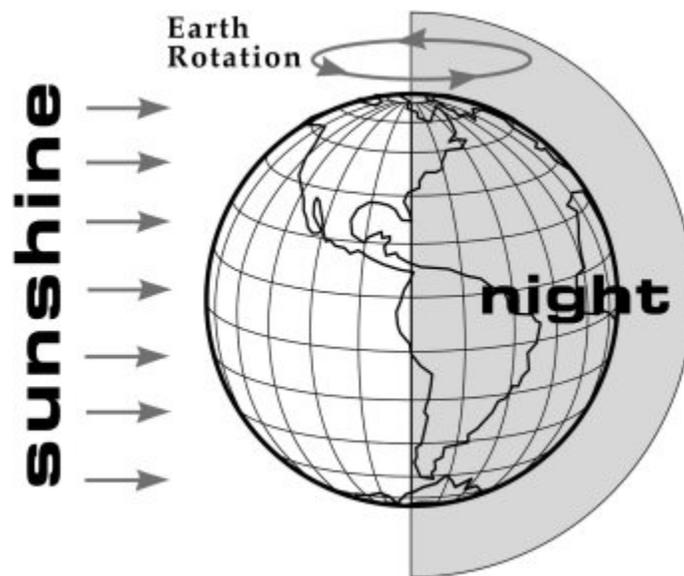


## Globe Lesson 11 - Rotation of the Earth - Grade 6+

### Day and Night

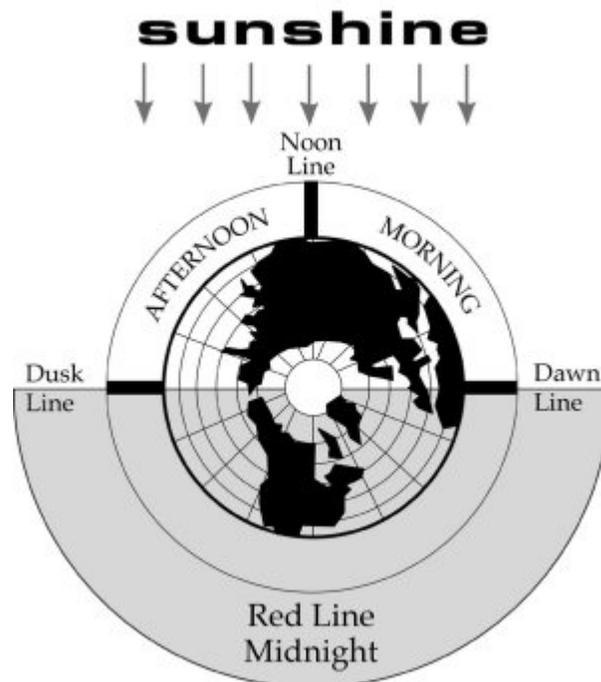
The Earth rotates, or spins, on its axis once every 24 hours. The sun is the Earth's only source of light. This spinning produces the pattern of day and night as different parts of the Earth are exposed to sunlight. The sun is always shining on one-half of the Earth. This is called daytime. The part of the Earth not facing the sun is in darkness, or nighttime.



On your globe draw an arrow along the line of dashes that represents the Arctic Circle. The arrow should start in Greenland and point toward Norway. Draw another arrow along the Arctic Circle, starting in Russia and pointing toward Alaska in the United States. These arrows show the direction that the Earth rotates, from west to east.

### Midnight and Noon

Take the globe out of the Horizon Ring cradle. Set it where it will not roll around. On the Horizon Ring of your globe cradle find the red line. This is the Midnight Line. Find the exact opposite location on the ring. Draw a black line across the ring at this location. This is the Noon Line. Turn the Horizon Ring so the red line is toward you.



On the right side of the Horizon Ring draw a line halfway between the Noon Line and the Midnight line. This is the Dawn Line.

On the left side of the Horizon Ring draw a line halfway between the Noon Line and the Midnight Line. This is the Dusk Line.

Between the Dawn Line and the Noon line write Morning or AM on the Horizon Ring. Between the Noon Line and the Dusk Line write Afternoon or PM.

Place the globe back in the Horizon Ring with the North Pole at the top, or pointing toward the ceiling.

The arrows around the North Pole do not point the way the hands on the clock turn. They point counterclockwise. With the North Pole upwards, rotate the globe in this direction. The globe should rotate the opposite of clockwise.

The Dawn Line shows where the Sun is coming up. The Dusk Line shows where the Sun is setting. The area between both of these lines that includes the red line (midnight) is away from the sunlight. This area is in the dark. It is nighttime there. You may wish to write night on this part of the ring. The area on the opposite side of the ring is in the sun lighted area - daytime.

Continue the exercise with the North Pole upward, or pointing toward the ceiling. Rotate

the globe in the cradle until meridian 105 W is directly over the Midnight (red) Line. Follow this meridian north. It is midnight in what city in the United States?

1. \_\_\_\_\_

### Answer These Questions

With the globe in this position, midnight at 105° W, answer the following questions.

2. It is about noon in: \_\_\_\_\_ Toyko, Japan \_\_\_\_\_ Bombay, India \_\_\_\_\_ Paris, France.

3. It is dark in: \_\_\_\_\_ Honolulu, Hawaii \_\_\_\_\_ Moscow, Russia \_\_\_\_\_ Beijing, China.

4. The sun has just come up in: \_\_\_\_\_ Madrid, Spain \_\_\_\_\_ Rome, Italy  
\_\_\_\_\_ London, United Kingdom.

5. It is morning in: \_\_\_\_\_ Ankara, Turkey \_\_\_\_\_ Perth, Australia  
\_\_\_\_\_ Los Angeles, California

6. It is afternoon in: \_\_\_\_\_ Tokyo, Japan \_\_\_\_\_ Cairo, Egypt  
\_\_\_\_\_ New York, New York.

Rotate the globe in the correct direction until it is midnight in Hanoi, Vietnam. The Midnight Line should be very near meridian 105° E. be sure that the North Pole is on top, pointed toward the ceiling.

7. About how many degrees did the Earth turn? \_\_\_\_\_
8. At the new position, the sun will set in a short time in: \_\_\_\_\_ Paris,  
France  
\_\_\_\_\_ Honolulu, Hawaii \_\_\_\_\_ Washington, DC
9. Which of these cities experience sunrise when you rotate the globe?  
\_\_\_\_\_ San Francisco, California \_\_\_\_\_ Montreal, Canada  
\_\_\_\_\_ Dar es Salaam, Tanzania
10. Which of these cities experienced sunset when you rotated the globe?  
\_\_\_\_\_ Miami, Florida \_\_\_\_\_ Buenos Aires, Argentina \_\_\_\_\_  
Damascus, Syria