

Name: _____ Period: _____ Date: _____ EN _____

GLOBE LAB

In this lab you will use a mini-globe and a flashlight to simulate the interaction of the Earth and the Sun.

It is important that you begin this lab with the Sun and Earth in proper orientation. Without any tilt on the Earth, shine the flashlight directly on the equator. Make sure that the flashlight is held level (don't tilt it at all)! Keep the flashlight level.

First, you will simulate the motion of the Earth as it rotates on its axis. Orient the Earth so that it is tilted approximately 23° **toward** the Sun. Make sure that the Sun always stays level.

1. The Earth rotates counterclockwise. Now show how the Earth rotates on its axis. How does this affect the light received at each point on the Earth's surface? What does this rotation cause?
2. In this orientation, which hemisphere receives the most sunlight? The least?
3. Is any place on Earth not receiving any sunlight? Where?
4. At what latitude on Earth is the sunlight shining directly? What is this place called?

Now show how the Earth orbits the Sun. Move the Earth a quarter of a circle around the Sun. Once you arrive at the new position, begin spinning the Earth again on its axis.

5. In this orientation, which hemisphere receives the most sunlight? The least?
6. Is any place on Earth not receiving any sunlight? Where?
7. At what latitude on Earth is the sunlight shining directly? What is this place called?

Continue to show the Earth's orbit of the Sun by moving the Earth another quarter circle around the Sun. You should be in a straight line from where you started.

8. In this orientation, which hemisphere receives the most sunlight? The least?

9. Is any place on the Earth not receiving any sunlight? Where?

10. At what latitude on the Earth is the sunlight shining directly? What is this place called?

Move to the last position, one-quarter circle from where you were in 8-10.

11. In this orientation, which hemisphere receives the most sunlight? The least?

12. Is any place on Earth not receiving any sunlight? Where?

13. At what latitude on Earth is the sunlight shining directly? What is this place called?

Each of the positions of the Earth relative to the Sun has a date and a name associated with it. Go back to your questions and label these events and give dates. If you don't know the names and the dates, write them in when we go over the lab in class.

Once you have finished the lab, you must show your model of the motion of the Earth and Sun to your teacher. She will initial below when you have **correctly** shown her the motion of the Earth.

Teacher's Initials: _____