

Seasons and the Sun

Essential Questions:

1. What effect does the distance between the Earth and the Sun have on the seasons?
2. What effect does the amount of sunlight have on the seasons?
3. What effect does the angle of sunlight have on the seasons?

Data Analysis - Distance Between the Earth and the Sun graph

Answer the following questions

1. Choose one: The high point in the graph shows:

- the closest distance between the sun and the Earth.
 the farthest distance between the sun and the Earth.

2. Contrast the difference in distance between June and December.

3. Do you think people in the Southern Hemisphere would look at this data in the same way that we do in the Northern Hemisphere? Explain.

Data Analysis - Average Temperature in Portland, OR.

Answer the following questions

1. Choose one: The high points in the graphs shows:

- the warmest temperatures during the year.
 the coolest temperatures during the year.

2. This graph helps support the idea that:

- the distance between the Earth and Sun affects the seasons.
 the distance between the Earth and Sun does not affect the seasons.

Explain -

3. How would this graph look different for a city at the same latitude in the Southern Hemisphere?

Globes and String

Measure the length of the strings on the globe in centimeters and calculate the hours of daylight. Record in the following data table. 3 cm = 1 hour of daylight. To calculate the hours of daylight, divide the string length by 3.

Latitude	String Length	Hours of Daylight
45°N		
0° ~ "The Equator"		
45°S		

Which season you think the NORTHERN HEMISPHERE is experiencing in this globe? Explain why.

Indirect vs. Direct Light

Examine the light pattern on the counter at each of the two flashlight demonstrations. Record your observations in the space below:

	Sketch what you see. Include the of the angle the light hits the counter in your drawing.
A	
B	

1. Which setup has the brightest, most intense light?

2. Which setup is aimed more directly at the counter?

3. If the flashlights were giving off heat, like the sun, which setup would you expect to be the hottest?

4. Which setup do you think is most like the angle of light and heat from the sun hitting one of Earth's hemispheres during winter? What about summer? Explain your answer.