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# Activities

## Reasons for the Seasons

Name: _____ Date: _____

The tilt of Earth's axis helps explain why the amount of daylight changes season to season. What would happen if it didn't tilt? You'll find out in this Planet Diary activity.

### Directions

- Go to Seasons Interactive from the Lawrence Hall of Science to experiment with changing Earth's tilt. Study the graphic and read the introduction. Notice the latitude of Anchorage, Chicago, Quito, and Melbourne.
- Click *Continue to Interactive* at the top, then *Show* in the Tropics/Equator bar. This makes lines of latitude visible. Clicking the blue dots next to the city names makes them appear on the globe. Set the month to March. Set Earth's tilt to 23.5 degrees. Notice the daylight hours for each city. Record the data (hours and minutes) in the Workspace table for question 1.
- Keep the tilt at 23.5 and repeat for June, September, and December. Record your data. Use the data to answer questions 2 and 3.
- What would happen if Earth didn't tilt on its axis? Set the tilt to 0 degrees. Compare the results for March, June, September, and December for the four cities. Record your data in the table for question 4. Then answer the last question.

### Workspace

1. Daylight Hours @ 23.5 Degrees Tilt

| City | Mar | June | Sep | Dec |
|---|---|---|---|---|
| Anchorage | | | | |
| Chicago | | | | |
| Quito, Ecuador | | | | |
| Melbourne, Australia | | | | |

2. Which city has the greatest variation in daylight hours? The least? Use their latitude to explain why.

3. How do the daylight patterns of Melbourne and Chicago compare? Use their location relative to the equator to explain why.

4. Daylight Hours @ 0 Degrees Tilt

| City | Mar | June | Sep | Dec |
|---|---|---|---|---|
| Anchorage | | | | |
| Chicago | | | | |
| Quito, Ecuador | | | | |
| Melbourne, Australia | | | | |

5. What conclusion can you draw from the data?

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