

# Seasons are flipped in the Northern and Southern Hemispheres

By Washington Post, adapted by Newsela staff on 12.17.18

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December 21 is the shortest day of the year in the Northern Hemisphere. At this time of year, playing outside after school might mean playing in the dark. Photo by: Klaus Vedfelt/Getty Images

December 21 is the winter solstice, and that means it's the shortest day of the year on our part of the planet, the Northern Hemisphere. The Northern Hemisphere's longest day is the summer solstice, on June 21. The Earth is divided into four hemispheres: the northern, southern, eastern and western. In the Northern Hemisphere, seasons are the opposite of the Southern Hemisphere. So why do days and nights get longer and shorter between these two days?

From our earthling perspective, it looks like the sun moves in the sky all the time. However, we're the ones moving. Earth orbits, or revolves, around the sun at 67,000 miles per hour. That's a thousand times faster than a car on the highway! The Earth itself also spins around on an imaginary line called an axis.

## Spinning Away From And Toward The Sun

Here's an image to think of how the Earth moves. Imagine a basketball player twirling the Earth on her finger while she runs in a circle around a spot on the floor. That spot is the sun. Our planet is the doubly twirling basketball! Each twirl on the player's finger makes up one day. Each circle she completes on the floor is a year. The sun doesn't move, but we experience different levels of light — a burst of sunshine at noon, the pitch-black of night and everything between — because we're spinning away from and toward the sun.

Maybe you're asking why daytime and nighttime are not equal? It's because of the Earth's axis — that imaginary line it spins on. The axis is tilted instead of standing straight. Instead of the top and bottom of the planet each being half in darkness and half in light, one end is always tilting more into the sun's rays than the other. Throughout the year, the portion facing the sun shifts. The shifting cycle is complete at the summer and winter solstice.

## Angled Axis Creates The Seasons

Right now, the top half of the Earth (the Northern Hemisphere) is tilting almost as far away from the sun as possible. The opposite is true for the Southern Hemisphere. There, the days have been getting longer — and will start getting shorter just as we steal our precious daylight back. This slightly angled axis also creates the seasons. As we progress through the year, different parts of the Earth are more directly hit by the sun's light. This is why summer in the Southern Hemisphere falls during our winter.

Not all parts of the world experience the solstice quite like we do. Near the equator — an imaginary belt going around the planet's middle — days and nights always stay close to 12 hours each. The way the top or bottom of the planet is tilting doesn't much change where the middle sits. Compare that to the North Pole, where it's been totally dark since October. For a few weeks before then, the area was in constant twilight. The true feeling of daytime won't come back there until March. From then, the sun will seem to stay up all summer long! Between the arctics and the equator, there's a bit more balance. At least you can say you live in a place where the sun always comes out — even if it'll be out for a little less time tomorrow.

## Quiz

- 1 Read the following paragraph from the introduction [paragraphs 1-2].

*From our earthling perspective, it looks like the sun moves in the sky all the time. However, we're the ones moving. Earth orbits, or revolves, around the sun at 67,000 miles per hour. That's a thousand times faster than a car on the highway! The Earth itself also spins around on an imaginary line called an axis.*

Which answer choice is an accurate explanation of what this paragraph means?

- (A) The Earth moves in four directions so the sun hits each hemisphere.
- (B) The Earth moves in two directions so the sun seems to go up and down.
- (C) The Earth moves quickly around the sun while also rotating on its axis.
- (D) The Earth moves too quickly at some times for sunlight to catch up.

- 2 Read the following paragraph from the section "Angled Axis Creates The Seasons."

*Right now, the top half of the Earth (the Northern Hemisphere) is tilting almost as far away from the sun as possible. The opposite is true for the Southern Hemisphere. There, the days have been getting longer — and will start getting shorter just as we steal our precious daylight back. This slightly angled axis also creates the seasons. As we progress through the year, different parts of the Earth are more directly hit by the sun's light. This is why summer in the Southern Hemisphere falls during our winter.*

Which detail from this paragraph supports the conclusion that the length of days and nights in the two hemispheres will reverse in relation to one another?

- (A) Right now, the top half of the Earth (the Northern Hemisphere) is tilting almost as far away from the sun as possible.
- (B) There, the days have been getting longer — and will start getting shorter just as we steal our precious daylight back.
- (C) This slightly angled axis also creates the seasons.
- (D) As we progress through the year, different parts of the Earth are more directly hit by the sun's light.

- 3 According to the section "Spinning Away From And Toward The Sun," how do unequal days and nights happen?
- (A) The Earth makes a complete circle all the way around the sun once each year.
  - (B) The Earth tilts one end more into the sun's rays while also rotating on its axis.
  - (C) The sun shines more brightly at certain times of day and gives off less light at others.
  - (D) The sun moves farther away from the Earth at certain times of year than others.
- 4 What is the relationship between the Earth's poles and the equator?
- (A) The poles experience extremes of day and night that last for months, while the equator experiences days and nights that are almost always equal.
  - (B) The poles experience the darkness of night all the time because they are far from the sun, while the equator experiences the light of day all the time.
  - (C) The poles experience their winter solstice during the month of October, while the equator experiences the winter solstice in December.
  - (D) The poles experience seasons that are almost always the same temperature, while the equator experiences seasons that change drastically.

## Answer Key

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