

SEASONS

Extension Questions

For each of these questions, sketch a diagram to help us understand your thinking.

1. Determine the relationship between a city's latitude and the Sun's angle at midday for the equinoxes. How does the midday Sun angle differ between the equinoxes and the solstices?
2. Describe the locations on Earth (in terms of latitude) where the Sun can be directly overhead.
3. Describe the locations on Earth (in terms of latitude) where it is possible for the Sun to never rise for an entire day at certain times of year.
4. Uranus has an axis tilt of 98 degrees (meaning it basically spins on its side). Describe the seasons on Uranus for a visitor to the "northern" hemisphere, equator, and "southern" hemisphere.
5. Imagine a planet around a sun-like star in our galaxy.
 - Decide what kind of orbit shape the planet has (anywhere from essentially circular to highly elliptical). Assume the planet orbits at an average distance comparable to Earth's distance from the Sun.
 - Decide what axis tilt the planet has.

Do you think life could evolve on a planet with your chosen characteristics? What kind of adaptations would be necessary to help a species thrive on this planet?