1.

Day and night are caused by the rotation of the Earth on its axis.

The Earth spins around an imaginary line called its axis, which runs from the North Pole to the South Pole. This rotation takes about 24 hours to complete. As the Earth rotates:

The side facing the Sun experiences daytime because it is exposed to sunlight.

The side facing away from the Sun experiences nighttime because it is in the Earth’s shadow.

So, as the Earth keeps rotating, different parts move in and out of sunlight, creating the cycle of day and night.

2.

The changes in seasons are caused by the tilt of the Earth’s axis as it orbits the Sun.

1. Earth’s Tilt: The Earth is tilted at an angle of about 23.5 degrees. This tilt doesn’t change as the Earth orbits the Sun, meaning one hemisphere is tilted toward the Sun while the other is tilted away.
2. Earth’s Orbit Around the Sun: As Earth moves around the Sun during the year, different parts of the planet receive different amounts of sunlight.
3. More or Less Sunlight:

When the Northern Hemisphere is tilted toward the Sun (around June), it experiences summer—longer days and more direct sunlight.

At the same time, the Southern Hemisphere is tilted away from the Sun, so it experiences winter—shorter days and less direct sunlight.

Around December, the situation reverses.

1. Equinoxes: Twice a year (around March 21 and September 23), the tilt is such that both hemispheres receive equal sunlight. These are called equinoxes and mark the start of spring and autumn.

3.

If the Earth suddenly lost gravity for just one second, things would get wild and fast. Here’s what would likely happen:

1. Everything Not Anchored Would Launch Upward

Gravity is what keeps everything—us, water, air, buildings—pulled toward the center of the Earth.

Without gravity, people, cars, trees, and loose objects would fly upward at the speed Earth was pulling them down—about 9.8 m/s (meters per second).

For that one second, everything would rise. After gravity kicks back in, everything would fall back down… hard.

1. The Atmosphere Would Start to Drift Off

Air isn’t tied down by chains—it’s held by gravity. Losing it even for a second means the upper layers of the atmosphere would begin to escape.

That could cause a sudden drop in air pressure, which would feel like an extreme, brief vacuum.

1. Ocean Water Would Surge

The oceans would temporarily leap upward, creating tsunami-like effects when gravity returns. Think of massive, global waves crashing back down.

1. Birds, Planes, and Satellites Would Be Affected

Birds might lose control mid-flight. Planes could experience turbulence. Low-orbit satellites might drift slightly off their paths.