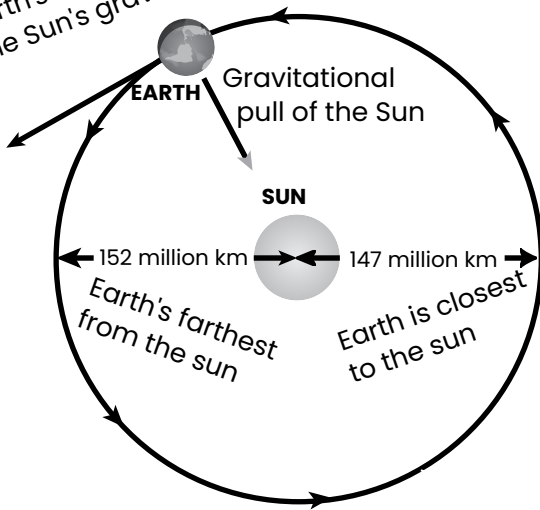


Earth Rotation & Revolution

Earth's motions without the Sun's gravitational pull



If you look around you, it does not seem as if Earth is moving. The ground, trees, and buildings do not seem to be moving. But Earth is always in motion. It spins and moves around the Sun. Earth's motion causes changes on Earth. As Earth spins, day changes to night and back to day again. The seasons change as Earth moves around the Sun. Summer turns to winter because Earth's motion changes how energy from the Sun spreads out over Earth's surface.

As Earth revolves around the Sun, it spins. A spinning motion is called **rotation**. Earth rotates on an imaginary line that runs through its center. The line on which an object rotates is the **rotation axis**.

If you could look down onto Earth's North Pole, you would see that Earth rotates in a counterclockwise direction, from west to east. One complete rotation of Earth takes about 24 hours. One rotation completes Earth's cycle of day and night. It is daytime on the half of Earth that faces the Sun. It is nighttime on the half of Earth that faces away from the Sun.

The motion of one object around another object is called **revolution**. Earth makes one complete revolution around the Sun every 365.24 days. The path an object follows as it moves around another object is an **orbit**.

Earth orbits the Sun in an almost circular path. Earth orbits the Sun because the Sun's gravity pulls on Earth. The strength of gravity's pull between two objects depends on the masses of the objects and the distance between them. An object with more mass has a greater pull of gravity than an object with less mass. Likewise, gravity's pull is greater on objects that are closer together.

Earth's orbit around the Sun is like the motion of an object twirled on a string. The string pulls on the object and moves it in a circle. If the string breaks, the object flies off in a straight line. The Sun's gravity is like the string. Gravity keeps Earth revolving around the Sun in a nearly circular orbit. If the pull of gravity between the Sun and Earth stopped suddenly, Earth would fly off into space in a straight line.



Earth's rotation axis is tilted. The tilt of Earth's rotation axis does not change. During one-half of Earth's orbit, the north end of the rotation axis is tilted toward the Sun. During the other half of Earth's orbit, the north end of the rotation axis is tilted away from the Sun.

