



Introduction

The moon has always been a **source of wonder** and **mystery**. Most often we see it **lighting up the night sky**, but sometimes we can see its glow in the daytime, too.

Careful observers will notice that the moon appears to change shape. Sometimes it is big and round, and other times it looks like a thin sliver.

Many ancient **myths** and **legends** from around the world are about the moon and how it affects creatures on Earth. People wrote songs about the moon's beauty and created festivals to celebrate it. The moon was even used to **keep track of time**.

Over the years, scientists have made many **crucial discoveries** about the moon. **Astronauts have explored** its surface and brought back chunks of moon rocks for us to study. But when it comes to unlocking the **moon's secrets**, we have only scratched the surface!

The moon is moving away from Earth at a rate of 1.5 inches per year (3.8 centimeters per year).



When Earth rises above the moon's surface, it looks like a blue and white marble in space.

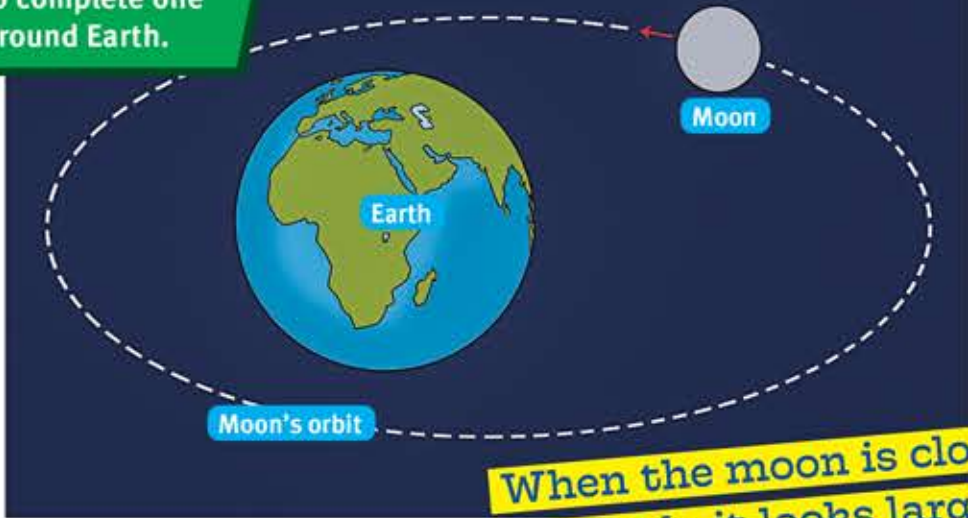
CHAPTER

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Our Nearest Neighbor

The full moon is the brightest object in the night sky. From Earth, the full moon appears to be as big as the sun. However, it is actually much smaller. The moon looks large because it is our closest neighbor in space. The average distance between Earth and the moon is 238,855 miles (384,400 kilometers). If you drove from Earth to the moon going 60 miles per hour (97 km per hour), it would take almost six months!

It takes the moon 27.3 days to complete one orbit around Earth.



When the moon is closest to Earth, it looks larger than normal. This is called a supermoon.

Circling Earth

The moon does not move randomly through space. Astronomers call it a **satellite** because it orbits, or travels around, Earth. The moon is the only permanent **natural satellite** of our planet.

The path the moon takes around Earth is not a perfect circle. It is shaped more like an oval and is called an ellipse. Because of the shape of the moon's orbit, the distance between Earth and the moon changes during the year.

Measuring the Moon

So how does the moon measure up when compared to Earth? If the moon and Earth were placed side by side, Earth would be about four times wider. This means that if Earth were a big hollow ball, you could stick about 50 moon-size balls inside of it! Like Earth, the moon is a bit wider when measured at the equator than from pole to pole.

The diameter of the moon across its equator is about 2,160 miles (3,476 km). That is about the distance from New York to Utah.

