Name_____

A moon is a **satellite** that goes around a planet. Some planets do not have a moon. Some planets have many moons. Earth has one moon.

The Moon is our nearest neighbor in space. It is smaller than the Earth. It only looks bigger because it is much closer to the Earth. It is 240,000 miles away. The Moon orbits the Earth one time about one time a month. When a planet or moon travels around the body it is orbiting one time, this is a **revolution**. The Moon **revolve**s around the Earth. The Earth revolves around the sun. One revolution on Earth takes one year to go all the way around the sun.

Our view of the sunlit part of the moon changes as the moon circles Earth, so the shape of the Moon **seems** to change. These changes are called **phases**. A complete phase cycle takes an average of 29.5 days from one New Moon to the next. A **New Moon** is the phase of the Moon that is nearly or totally invisible from Earth. The **Full Moon** is when the Moon is totally visible or bright in the night sky.

Rotation is when a planet or moon turns all the way around or spins on its axis one time. The **axis of rotation** is an imaginary line going form the north pole to the south pole. The moon turns on its axis of rotation very slowly compared to the Earth. When moon **rotates** once, it takes about 29 days. One **day** on the moon takes about two weeks. One **night** on the moon takes about two weeks. The time the Moon takes <u>to turn on its axis and the time it takes to orbit</u> Earth <u>are equal</u>—about 29 days. So every time the moon goes around the Earth it turns around one time. That is why the moon always looks the same. We only see one side of it---the **near side** of the Moon. We <u>do not</u> see the **far side** of the Moon. At any given time, one half of the Moon is always reflecting sunlight.

There is **no air or water** on the moon. It is dry, dusty, and lifeless. There are tall mountains and flat, dusty plains on the moon. There are many big holes called **craters**. Craters are made when space rocks hit the moon. During the daytime on the Moon it is very hot. It is hotter than boiling water. This is because there is no air to protect the moon from the hot sunlight. At night the Moon gets very cold. It is much colder than freezing because there is no air to hold heat on the Moon. The moon does not make its own light. We can see the Moon because it **reflects** light from the sun.

Astronauts actually going to the Moon was intensified by the Cold War, a tense long-term conflict between the U.S. and the Soviet Union. The Soviets shocked the world by successfully launching *Sputnik I,* the first man-made satellite. In April 1961, they put the first man in space, Yuri Gagarin. Americans felt they had to catch up and the **"space race"** to the Moon was on! After their initial successes, the Soviets had many failed attempts to reach the Moon, and Americans did, in fact, get there first.

In May 1961, U.S. President John F. Kennedy made one of the boldest challenges in history: "I believe this nation should commit itself to achieving the goal before this decade is out, of landing a man on the Moon and returning him safely to the Earth." *Apollo 11* astronauts Neil Armstrong, Edwin Aldrin, and Mike Collins were the first to reach the Moon. On **July 20, 1969**, While Mike Collins orbited overhead in the command module *Columbia,* Neil Armstrong and Edwin "Buzz" Aldrin touched down on the Moon in their *Apollo 11* landing craft, the *Eagle*. Neil Armstrong announced, "The **Eagle** has landed." At 9:56 p.m. he stepped onto the moon's surface, proclaiming, "That's one small step for man, one giant leap for mankind." It took more than 400,000 people working behind the scenes to get them there. *Apollo 11* plaque left on the moon reads: "Here men from the planet Earth first set foot upon the Moon July 1969, A.D. We came in peace for all mankind." That mission was followed by six other successful Apollo missions. In all, just **12 men** walked on the Moon between July 1969 and December 1972.