

All About the Moon

- The Moon is about $1/4^{\text{th}}$ the diameter of Earth - it would take about 64 Moon's to fill up the Earth's inside.
- The Moon is ~250,000 miles from Earth - A trip takes humans 2 - 3 days.
- If the Earth were the size of a basketball, the Moon would be the size of a tennis ball and it would be about 23.5 feet away.
- The Moon's gravity is about $1/6^{\text{th}}$ of Earth's - if you weighed 80 pounds on Earth you would weigh about 13 pounds on the Moon.
- The Moon does not make its own light. The Moon glows because it reflects the Sun's light. Planets (like Earth) and moons do not make their own light; only stars like our Sun make their own light.
- Lunar eclipses occur when the Sun, Earth, and Moon are all in a line, with the Earth between the Sun and Moon; the Moon is in the Earth's shadow.
- The mean temperature at the surface is 224° F on the side exposed to the Sun and 243° F *below zero* on the side facing away from the Sun.
- The Moon rotates about as fast as it orbits Earth (about 27 days) – so we always see the same side of the Moon from Earth.
- There is no atmosphere (or magnetosphere) on the Moon to project the surface from dangerous radiation or incoming meteoroids.
- You can see the dark circular lunar basins and light colored highlands on the Moon's surface.
- The light colored, very cratered highlands are the old lunar crust – the crust that formed from a magma ocean soon after the Moon formed 4.5 billion years ago!
- The basins were formed by BIG impacts early in the Moon's history.
- Later, lava filled the basins. The dark-colored plains we see are made of a fine-grained, dark, volcanic rock called basalt – the same rock that is found on Earth's ocean floors and that makes up the Hawaiian islands.
- While BIG impacts stopped occurring after about 4 billion years ago, smaller, more occasional, impacts continued, giving the Moon its cratered surface. All this pummeling has created layer of ground-up rocky "soil" - regolith - that blankets nearly the entire surface of the Moon.
- Since 1959 there have been 46 successful missions to the Moon, including orbiters, landers, and the Apollo missions. 12 Astronauts have walked on its surface between 1969 and 1972.