



**In the 21st century, will the Moon become a place where people live, learn, work, and play? With only 1/6 Earth's gravity, imagine pole vaulting to incredible heights or new events such as human flight!**



## The Lunar Games

In the 21st century, the Moon will likely become one more place where people live, learn, work, and play.

As envisioned here, **The Lunar Games** could well reflect today's athletic contests, but with only one-sixth the gravity of Earth, holders of "world records" would have to specify *which* world they mean! Imagine lunar pole vaulting records over 120 feet (37 meters), long jumps of 180 feet (55 meters), and weightlifting records of masses equivalent to 2,500 pounds (1,136 kg) on Earth.

New events, such as human flight depicted here, could very well be possible with the Moon's reduced gravity, allowing athletes to propel themselves on a course within the pressurized dome of the stadium. Also, imagine the acrobatics when gymnasts remain "airborne" six times as long as they do now!

The stadium containing these events has a clear roof manufactured from lunar materials. The roof would keep out radiation while allowing an unobstructed view of the lunar landscape, quite a development challenge for future scientists and engineers.

Suspended from the top of the stadium, a holographic display shows highlights from the basketball game in the adjacent facility. Flags of participating countries line the stadium, and commercial advertisements cover the walls along the track. The event is broadcast to viewers on Earth through the large antennas outside.

Although many of the games' attendees will be lunar inhabitants, spectators (and sports reporters!) will also travel from Earth. The terran visitors arrive on lunar shuttles (visible in the distance) and, after being transported to the terminal at the end of the stadium, can use underground shuttle tubes to reach subsurface hotels for check-in before attending the events.

Let the Games begin!

### A Mathematics Exercise

Knowing that the Moon's gravity is only one-sixth of the Earth's gravity, how much would you weigh on the Moon? How far could you throw or kick a ball? How high could you jump? Follow the chart below.

#### Conversion Equations

To convert	Into	Multiply by
Earth weights	Moon weights	1/6 or .17
Earth distances thrown/kicked	Moon distances thrown/kicked	6
Earth height jumped	Moon height jumped	6

### Topics for Discussion

In the future, as people start to inhabit other worlds, there will be several physical and social changes and problems to consider. Humans are very much accustomed to the Earth's environment as we know it. Scientists have not yet found another planetary body that, in its current state, will sustain human life. As you

look at the stadium, what steps have been taken to ensure life support for the humans? From what environmental hazards would humans have to protect themselves?

How have humans adapted to inhospitable environments on the Earth? Compare and contrast measures humans will have to take to protect themselves on the Moon or on other bodies in our Solar System with what has been done here on Earth at the polar regions, in the deserts, and under the sea.

What would be the capability of athletes who actually grew up on the Moon? Without the life-long need to work against the greater pull of Earth's gravity, how would muscles develop? Would an athlete who grew up on the Moon perform as well as an athlete who grew up on Earth? Perhaps there would have to be different classes of competition, depending on how long you've lived on the Moon!

### About the Artist

Pat Rawlings produces space art reflecting robotic and human missions of planetary exploration, as well as visions of the eventual development of space.