



Moon Leap

How high could you jump on the Moon? Combine your knowledge of math and science to calculate your official "Moon leap" potential!

TEKS:

SCI 6.11 A: The student is expected to describe the physical properties, locations, and movements of the sun, planets, moons, meteors, asteroids, and comets.

SCI 6.11 B: The student is expected to understand that gravity is the force that governs the motion of our solar system.

SCI 3.6 C: The student is expected to observe forces such as magnetism and gravity acting on objects.

Materials:

- Paper
- Pencil or marker
- Ruler
- Tape

How To:

1. Tape a sheet of poster board, or multiple sheets of printer paper, on a wall. The bottom part of the poster/paper should be level with your head, while the top part of the poster/paper should be higher than the tips of your fingers on outstretched arms when you jump into the air.
2. Stand facing the poster/paper on the wall, holding a pencil or marker.
3. Reach your hand over your head, as high as you can, and make a mark on the paper. This is your starting point.
4. Take a small step back (no running starts!), bend your knees and jump as high as you can, making a mark on the paper with your marker at the highest point.
5. Measure the distance between your starting mark and your jumping mark. This is how high you jumped. Write down your measurement.
6. Multiply your jump measurement by six. That is how high you can jump on the Moon!

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STEM Explanation:

Were you surprised how high you would be able to jump if you traveled to the Moon? The current world record for "Highest Standing Jump" is held by Christopher Spell, who can jump 5.83 feet on Earth. On the Moon, Christopher would be able to jump over 34 feet into the air! Cougars can jump 19.6 feet on Earth... on the Moon, this feline species could scale a distance of over 117 feet!

Why can we jump so high on the moon? It's because of gravity. Gravity is a force that pulls things towards each other. It's one of the reasons we don't fall off the Earth! When you jump on Earth, Earth's gravity pulls you back to the ground. The force of gravity on Earth is higher than the force of gravity on the Moon, though. When you jump on the Moon, there is not as much gravity pulling you down, so you're able to get much higher in the air! What do you think it would be like to walk on the Moon? What would it be like to play basketball, soccer, or another sport?

Career Connection:

Physicists study the natural world, from the tiniest subatomic particles to the largest galaxies. They do experiments to discover the laws of nature. They study what things are made of (matter) and how things behave. They also learn about energy, studying how it changes from one form to another.

Resources:

<https://www.beyondthechalkboard.org/activity/moon-leap-2/>

<https://theconversation.com/curious-kids-how-high-could-i-jump-on-the-moon-120865>

<https://www.guinnessworldrecords.com/world-records/highest-standing-jump>

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