

Gravity on Earth and the Moon

Preparation

You can place a long piece of tape alongside the paper and label it with inches or centimeters, from the floor to the top of the chart paper or along the floor. This will help you quickly determine how high each person jumped in this activity, or can throw a ball or move a wheelchair rather than having to measure after each action.

What is gravity? How does gravity affects us on Earth?

Is the effect of gravity on the Moon the same, stronger, or weaker than it is on Earth.

The Moon's gravity is weaker than the Earth's – in fact it is $1/6^{\text{th}}$ as strong as on Earth. When you're on the Moon, you are $1/6^{\text{th}}$ as heavy, but your muscles are as strong as they are on Earth, so you can jump 6 times farther. How much do you weigh divide by 6 gives you and that is how much you would weigh on the Moon.

Try one of these:

How high can you jump on Earth on the Moon.....

How long can you jump on Earth..... on the Moon.....

How far can you throw a ball or bean bag on Earth..... on the Moon.....

How far can you propel your wheelchair with one big push on Earth..... on the Moon.....

Could you jump over your own head on the Moon, or farther than your own height? Who jumped the highest/farthest? 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?

Try the same activity for different bodies in our solar system. The activity is the same, but the calculations are different. Instead of multiplying by 6, use these numbers for other planets, moons, and the Sun:

- Mercury – 2.6
- Venus – 1.1
- Mars – 2.7
- Jupiter – 0.4
- Saturn – 0.94
- Uranus – 1.1
- Neptune – 0.9
- Pluto – 15
- Sun – 0.035
- Titan – 7.1 (Moon of Saturn)
- Ganymede – 6.7 (Moon of Jupiter)
- Triton – 12.8 (Moon of Neptune)
- Ceres – 33.3 (Dwarf planet in the Asteroid Belt)