



How Much Do You Weigh?

Purpose

To understand that weight is a measure of gravitational attraction and that this force is not the same on each planet.

Background

Gravity is a universal, natural force that attracts objects to each other. Gravity is the pull toward the center of an object; let's say, of a planet or a moon. When you weigh yourself, you are measuring the amount of gravitational attraction exerted on you by Earth. The Moon has a weaker gravitational attraction than Earth. In fact, the Moon's gravity is only $1/6$ of Earth's gravity. So, you would weigh less on the Moon. How much would you weigh on the Moon and on the other planets?

Procedure

1.

Write your weight (or an estimate) here:

2.

For a different planet, multiply your weight by the number given in the "New" Weight Chart.

Example for the Moon - for a person weighing 60 pounds on Earth:
 $60 \times 1/6 = 10$ A 60 pound person would weigh 10 pounds on the Moon! This example uses weight in pounds, but you can do this

activity using any unit you wish.

3.

Follow the example and fill in the blanks in the "New" Weight Chart. Show your work.

Key Words

force
gravity
gravitational attraction
weight
mass

Materials

"New" Weight Chart

calculators

bathroom scale