# Weight On Other Worlds

When we measure weight, we are measuring gravitational attraction. Different worlds like moons, dwarf planets, and planets have different strengths of gravitational attraction.

How much would YOU weigh on other worlds?

Helpful Materials and Tools:
- ✔ printout of weight charts
- ✔ bathroom scale
- ✔ calculator (optional)
- ✔ access to Internet for research (optional)
- ✔ willing family and/or pets (optional)

First, measure your weight here on Earth.

Your weight can be in either kilograms or pounds.

You can round up, round down, or use decimals depending on what works best with your scale.

Record your Earth weight:

_____

In this table, take your earth weight and use the values for each world to get your weight.

Earth weight: _____

| World | Multiply your Earth weight by: | Record your weight on different world: |
|---|---|---|
| Mercury | 0.4 | |
| Venus | 0.9 | |
| Earth | 1 | |
| Moon | 0.17 | |
| Mars | 0.4 | |
| Jupiter | 2.4 | |
| Saturn | 1.1 | |
| Uranus | 0.9 | |
| Neptune | 1.2 | |
| Pluto | 0.06 | |

Extension: Weigh family members and pets from your household, then find out what *they* would weigh on other worlds.

# Extension: Find more worlds...

The multiplier is the surface gravity of the other worlds relative to the surface gravity of the Earth. So if we wanted to find our weight on the dwarf planet Ceres, we would search for surface gravity and find a value close to 0.029 g. Because the surface gravity of Earth is 1 g, the multiplier is 0.029 without any units.
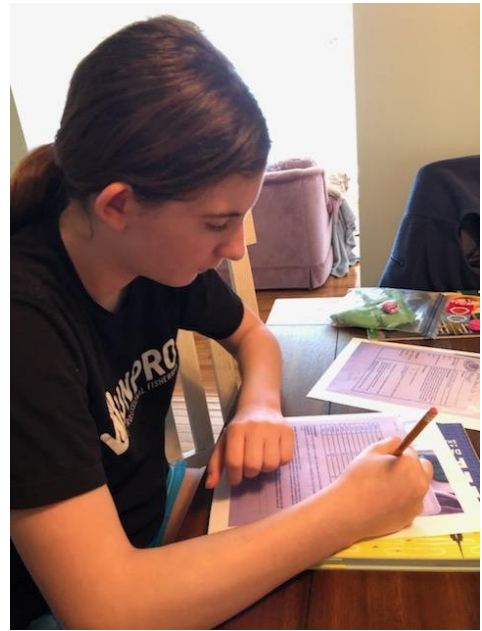


A good link to start your search:
http://en.wikipedia.org/wiki/Surface_gravity

| World | Multiplier: | Weight on other world: |
|---|---|---|
| Ceres (dwarf planet) | *0.029* | |
| Vesta (asteroid) | | |
| Eris (dwarf planet) | | |
| Titan (Saturn moon) | | |
| Ganymede (Jupiter moon) | | |
| Europa (Jupiter moon) | | |
| Enceladus  (Saturn moon) | | |
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