Gravity Investigation

**Part A: How much would you weigh on other planets and the moon?**

\*\*\*You can use an estimate of your weight for your calculations. (Round to the nearest tenth)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Location | Weight on Earth (lb) |  | Gravity |  | Calculated Weight (lb) |
| moon |  | x | 0.17 | = |  |
| Mercury |  | x | 0.38 | = |  |
| Venus |  | x | 0.86 | = |  |
| Mars |  | x | 0.38 | = |  |
| Jupiter |  | x | 2.78 | = |  |
| Saturn |  | x | 1.32 | = |  |
| Uranus |  | x | 0.93 | = |  |
| Neptune |  | x | 1.23 | = |  |

**Part B: How far could you jump on other planets and the moon?**

Determine how far you can jump on the Earth with a partner. Mark a starting line. Jump as far as you can off of both feet. Have your partner mark where you land first. Use a meter stick to measure the distance to the nearest cm. Record data for 5 trials to find your average jump. Round to the nearest tenth of a cm. (if you don’t have a ruler/meter tape at home, use a paperclip, marker, or pencil as your units)

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Jump 1 | Jump 2 | Jump 3 | Jump 4 | Jump 5 | Average Jump Distance |
| cm | cm | cm | cm | cm | cm |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Location | Average Jump Distance on Earth (cm) |  | Gravity |  | Calculated Jump Distance (cm) |
| moon |  | ➗ | 0.17 | = |  |
| Mercury |  | ➗ | 0.38 | = |  |
| Venus |  | ➗ | 0.86 | = |  |
| Mars |  | ➗ | 0.38 | = | \_\_\_\_\_\_\_cm |
| Jupiter |  | ➗ | 2.78 | = | \_\_\_\_\_\_\_cm |
| Saturn |  | ➗ | 1.32 | = |  |
| Uranus |  | ➗ | 0.93 | = |  |
| Neptune |  | ➗ | 1.23 | = |  |

Gravity Investigation Reflection

***Complete each statement.***

1) A person would weigh more on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

2) A person would jump farther on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ than on \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

because \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

3) The force of gravity between two objects depends on the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ of the

objects and the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ between them.

***\*Create three questions that could be answered using the data in this investigation. Be sure to include the answers!***

|  |
| --- |
| 1) |
| 2) |
| 3) |