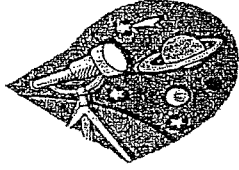


SPACE WEIGHT

(This activity complements those in the Sky Search Badge on pages 212-213 in your Junior Handbook)



Introduction: In this activity you will calculate your weight on the other planets of our solar system, based on how much you weigh on Earth.

Materials: Pencil, paper, scale, calculator (optional)

Definitions:

Matter - Everything in the universe, except energy, is made of matter. Matter can exist as a solid, liquid, or gas.

Mass - The amount of matter in an object.

Weight - The effect of gravity on matter.

Gravity - One of the basic forces in the universe.

Directions:

- Write your weight in pounds on this line _____. Enter this number for your weight on planet Earth.
- Complete the table below by multiplying your weight on Earth by the relative gravity of each planet.

Planet	Relative Gravity of Planet	Your Weight on Planet
Mercury	0.38	
Venus	0.91	
Earth	1	
Mars	0.38	
Jupiter	2.34	
Saturn	1.06	
Uranus	0.92	
Neptune	1.19	
Pluto	0.06	



Definitions:

Range - The highest value to the lowest value.

Median - The median is the middle value in the data set when the data are listed in numerical order.

Mode - The value most commonly seen in the data set.

Mean - What most people call the average. The data set added together and divided by the number of items in the data set.

Sample Data Set: 2, 2, 12, 4, 15, 9, 19

Range: 2-19

Median: 9

Mode: 2

Mean: 9

Directions: Using the data from your calculations, write the following answers.

The range of this data set is _____.

The median of this data set is _____.

The mode of this data set is _____.

The mean of this data set is _____.

What's this all about?

Relative Gravity: Everything in the universe (even you and your pet cat) has a gravitational field! Relative gravity is a result of the amount and type of matter in the planet or object. More massive objects have a stronger gravitational force, which is why the Earth's gravity dominates all objects on the Earth's surface, each of which has its own, tiny gravitational field.

Planets are different sizes and made of different matter; therefore, their gravitational fields are different from the Earth's in strength. Because weight is the effect of gravity on matter, your weight is different on other planets, but your mass (the amount of matter making you) is the same.

Resources:

Visit your school library or local library for books about space.

www.nasakids.org

www.rochesterastronomy.org

www.nineplanets.org

www.rmhc.org (Strasenburgh Planetarium)

