

11.4: Procedures

You will analyze your weight and mass on the planets in our solar system.

1. Estimate or measure your weight on Earth. Convert this weight from pounds to Newtons. (1 Newton = 0.2248 lb).
2. Draw a table in which to record your weight data for all 8 planets, Pluto, and our Moon. **Do not fill in data until you have read the instructions for obtaining that data.**

Table 11.4.1: Weight Data

Object	Weight in lbs	Weight in Newtons
Mercury		
Venus		
Earth		
Moon		
Mars		
Jupiter		
Saturn		
Uranus		
Neptune		
Pluto		

3. Utilize the following website to learn your weight on other objects in our solar system, including all 8 planets, Pluto, and our Moon. Enter your approximate weight on Earth, and choose “calculate”. Your weight will be shown for each object in units of pounds. Record these weight values in your data table.

<http://www.exploratorium.edu/ronh/weight/>

4. Convert each weight from pounds to Newtons, and record these values in your data table. (1 Newton = 0.2248 lb)
5. Draw a 2nd table for your calculated mass. Enter your weight in Newtons for Earth and Mars. Calculate your mass on Earth and on Mars, and complete the table.

Table 11.4.1: Mass Data

Planet	$g (m/s^2)$	W (Newtons)	m (kilograms)
Earth	9.8		
Mars	3.8		

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