YOUR WEIGHT IN SPACE

Gravity is a universal, natural force that attracts objects to each other. It is the pull toward the center of an object, such as 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. Find out how much you would weigh on the Moon, Pluto and other planets.

Materials: Calculator, Pencils

Procedure:

1. Write your weight in the Earth box on the "New" Weight Chart.

2. For a different planet, multiply your weight by the number given in the chart.

Example for the Moon - for a person weighing 60 pounds on Earth:
60 x .17 = 10
A 60 pound person would weigh 10 pounds on the Moon!

3. Follow the example and fill in all of the blanks in the chart.

Locations:	Multiply Your Earth Weight By:	Your "New" Weight:
Sun	28	
Mercury	0.4	
Venus	0.9	
Earth	1	
Moon	0.17	
Mars	0.4	
Jupiter	2.5	
Saturn	1.1	
Uranus	0.8	
Neptune	1.2	
Pluto	0.01	

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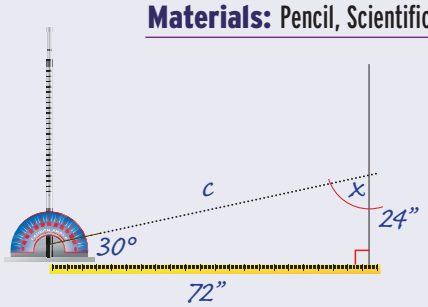
SPACE PIONEERS

Activity: Use Pythagorean Theorem to calculate the triangle created during a straw rocket launch given different variables.

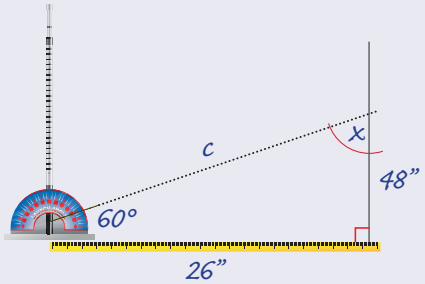
Directions:

Using each diagram below, first find the missing angle of the triangle (x). Second, calculate the length of the missing side (c) using Pythagorean Theorem, $a^2 + b^2 = c^2$

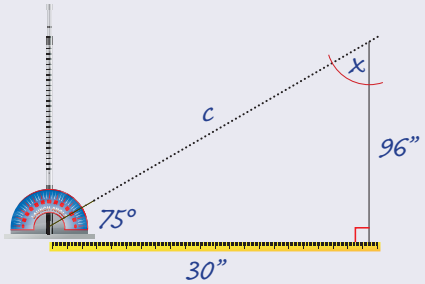
Materials: Pencil, Scientific Calculator



$x =$ _____



$x =$ _____



$x =$ _____

1. What is the geometric term for side (c) of the triangles?

_____

2. Based on your calculations, explain how the distance travelled by the rocket is affected by the angle of the launch.

_____

_____

_____

Note: Triangles are not to scale.