WHAT IS GRAVITY?

Read Pages 384-385 in Focus on Physical Science.

Write down one new idea you learned from your reading.

Objective- To learn about gravity and the factors that affect it.

RESEARCH

Gravity- a force of attraction between any two objects

Law of Universal Gravitation- all objects in the universe attract each other through gravitational force

The two factors that affect the gravitational force between two objects:

1. ***MASS*** - The more mass, the harder an object pulls on other objects.
2. ***DISTANCE*** - More distance results in a weaker gravitational pull.

DO: Draw force arrows between the two objects

Force of Gravity

Increased Mass

Increased Distance

Mass: the amount of matter in an object.

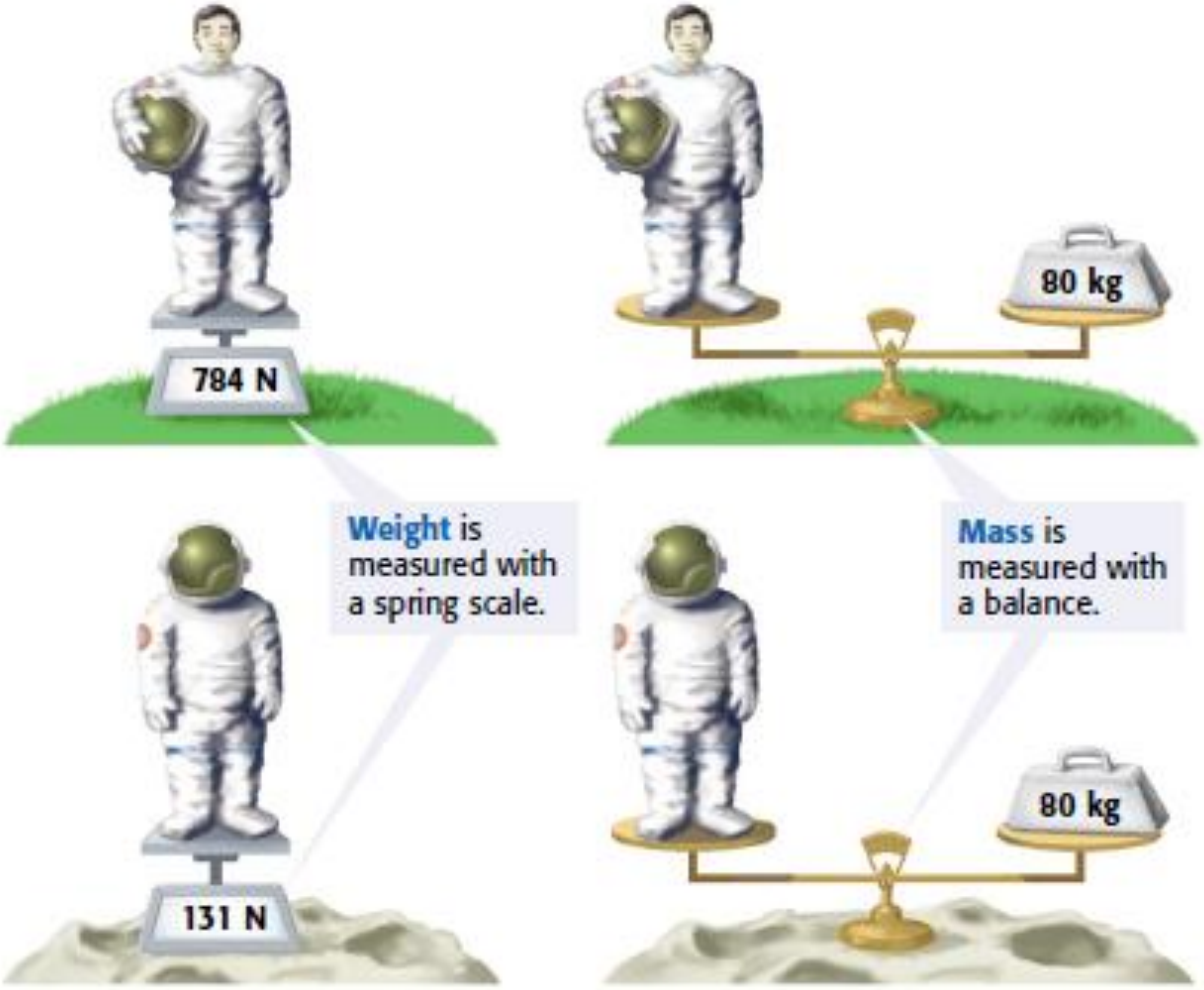
Mass does **not** change.

Weight: measure of the gravitational force exerted on an object.

COMPARED TO EARTH…

	Less Gravity- Moon	More Gravity- Jupiter
Gravitational Force	weaker	stronger
Weight	less	more
Mass	same	same

Weight and Mass Are Different



Weight is measured with a spring scale.

Mass is measured with a balance.

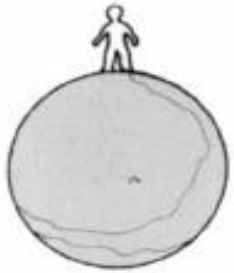
The astronaut's weight and mass on Earth are shown on the spring scale and balance.

The astronaut has the same mass on the moon, but his weight is one-sixth of his weight on Earth. This is because the moon's gravitational force is one-sixth that of Earth's.

Gravity

Weight is a measure of the force of gravity on an object. See how a 60 lb. child's weight differs from planet to planet.

Earth–60 lbs.

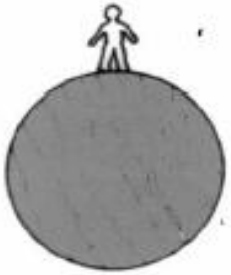


Pluto–8 lbs.

Mercury–21 lbs.

Mars–23 lbs.

Venus–52 lbs.

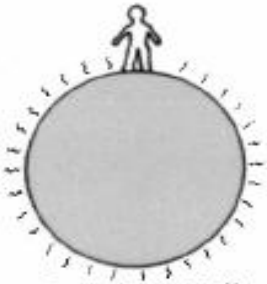


Uranus–64 lbs.

Saturn–68 lbs.

Neptune–85 lbs.

Jupiter–158 lbs.



Sun–16,740 lbs.