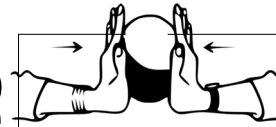


GRAVITY & WEIGHT

ESSENTIAL QUESTION:

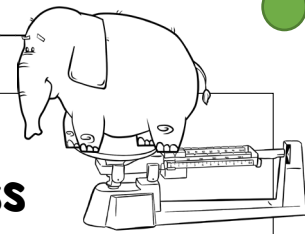
How is weight _____ on the force of _____?

VO CAB



force

Any influence, such as a _____ or a pull, that causes an object to _____ or change its speed, _____, or shape.



mass

A _____ of the amount of _____ that makes up an object.

TOPIC QUESTIONS:

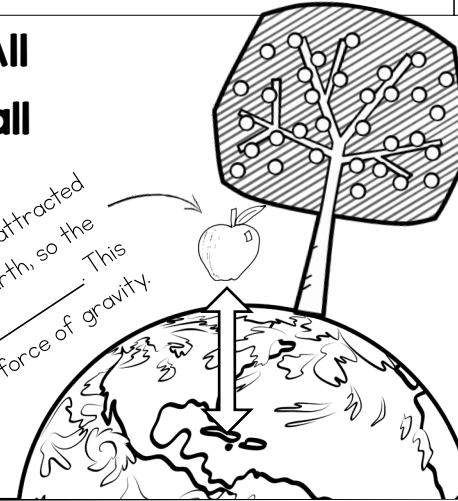
1

What is _____?

Gravity is an _____ force. All masses in the _____ attract all _____ masses in the universe.

Gravity is a _____ of ALL matter! But we don't feel this attraction force _____ the object has a _____ mass, like a planet.

The apple is attracted to the Earth, so the apple _____ This is the force of gravity.



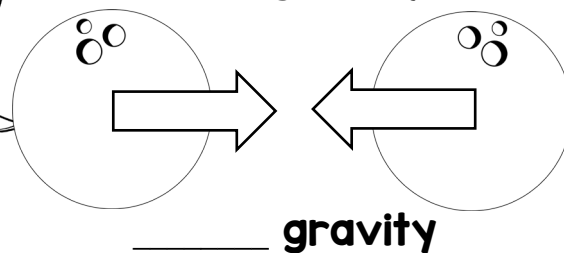
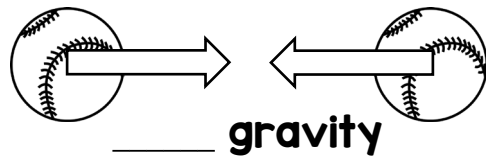
All matter on Earth is being _____ to the _____ of the planet.

Earth's mass is _____ large that its pull of gravity _____ all other gravitational forces of objects on its surface.

2

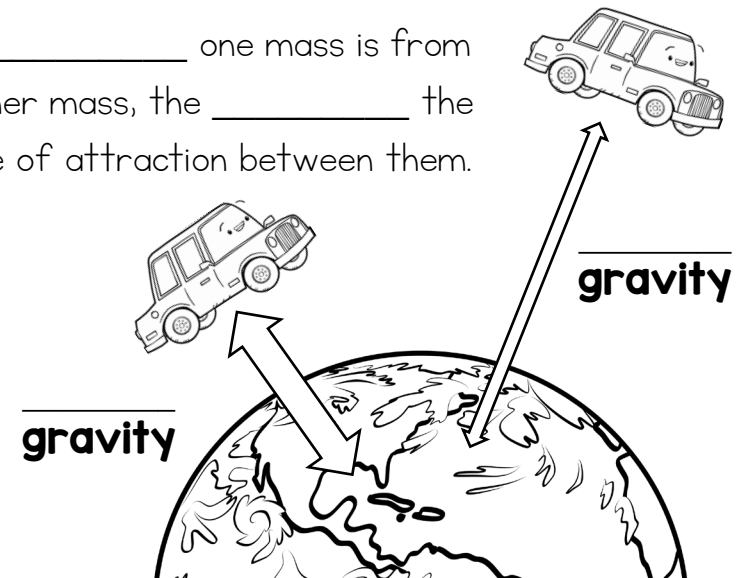
What _____ affect the _____ force _____ two objects?

Newton's Law of _____ Gravitation states that mass and distance affect the _____ of gravity.



The _____ the mass of each object, the _____ the force of attraction between them.

The _____ one mass is from another mass, the _____ the force of attraction between them.



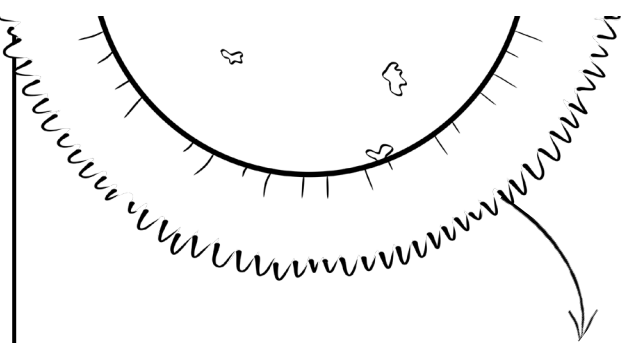
gravity

gravity

TOPIC QUESTIONS:

3

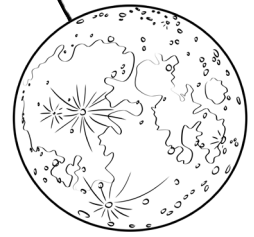
How does the Earth's gravity _____ to the gravity of the _____ and _____?



The Sun has _____ times the mass of the Earth. Its gravity is much, much _____ than the Earth's.

However, even though the Sun's gravity is stronger, the Earth's gravity has a much larger _____ on us. This is because gravity weakens with _____ and the Sun is so much _____ away from us than the _____ of the Earth.

The Moon's mass is _____ (1/6) that of Earth's, therefore it has only _____ the gravity of Earth.



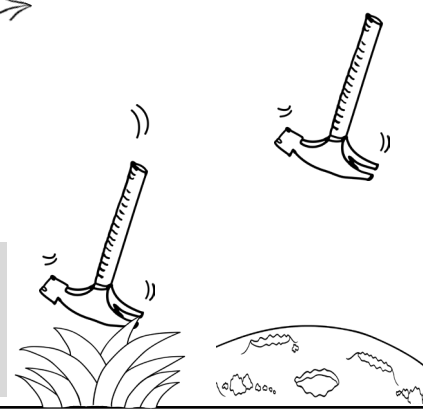
Why is the acceleration due to gravity on the Moon 1/6th that on Earth?



SIDE NOTE:

What is the _____ due to gravity?

ON EARTH	ON THE MOON
_____ m/s ²	_____ m/s ²



Weight is a measure of the force of gravity acting on an object's mass.

4

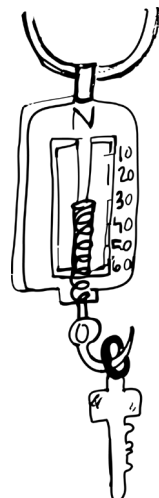
What is _____?

The _____ for weight is the unit for _____ - a _____, abbreviated "N"



The object _____ so the spring scale measures the force of gravity _____ on it.

Weight is measured by a _____.

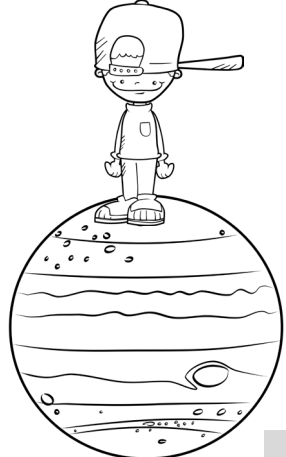


This key weighs about 30 _____ Its mass is being pulled _____ with a force of 30 N.

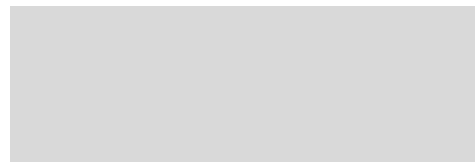


Why would you weigh nothing in outer space?

If you weigh _____ N on Earth,



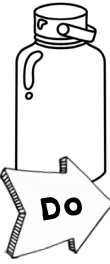
you would weigh _____ N on Jupiter and _____ N on Mars.



TOPIC QUESTIONS:

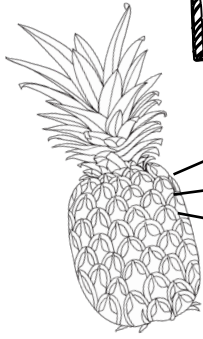
5

What is the difference between _____ and weight?



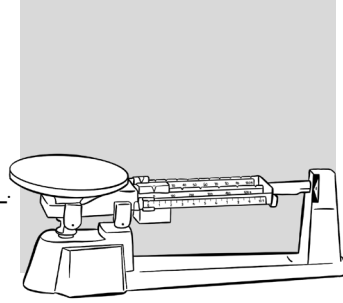
Draw a reusable water bottle on the balance and draw the same object being measured by the spring scale on the Moon and on Jupiter.

MASS



On Earth = ___ kg
 On Jupiter = ___ kg
 On the Moon = ___ kg

A quantity of _____.
 Measured with a _____.
 The standard unit is _____ (kg).
 Stays the _____ anywhere in the universe.

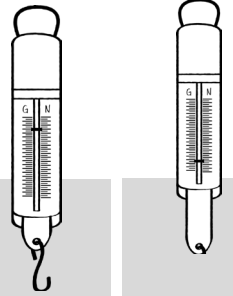


WEIGHT



On the Moon = ___ N
 On Jupiter = ___ N
 In Outer Space = ___ N

A quantity of _____ (gravity!).
 Measured with a _____.
 The unit for force is _____ (N).
 _____ throughout the universe depending on gravitational fields.



Weight on _____
 Weight on _____

SUM IT UP!

Use the Work Bank below to complete each statement.

WORD BANK	
CENTER	MATTER
DISTANCE	STRONGER
ATTRACTION	WEAKER
ACCELERATION	SPRING SCALE
MASS	OUTER SPACE
NEWTONS	WEIGHT
FORCE	JUPITER

- Gravity is a property of all _____ in the universe. It is an _____ force.
- All masses on Earth are pulled to the _____ of the planet.
- The Law of Universal Gravitation states that gravitational force is affected by the mass of objects and the _____ between them.
- The larger the masses of two objects, the _____ the gravitational force between them.
- The farther apart two objects are from one another, the _____ the gravitational force between them.
- The strength of gravity on a moon or planet can be measured by the _____ due to gravity. This is less on the Moon than on Earth because the Moon is 1/6th the mass of Earth.
- A measure of the _____ of gravity acting on an object's mass is _____. This is measured with a _____ in the unit of _____.
- If you traveled to the planet _____, your _____ would stay the same but your weight would be higher because there would be a greater force of gravity.
- You would weigh nothing here: _____.

How are you feeling about the basics of Gravity and Weight?
 Circle one:

