

Cornell Notes 91	Topic/Objective: Universal Gravitation	Name:
		Class/Period:
		Date:
Essential Question: How did Newton’s Law of Universal Gravitation change the way we view the universe? Essential Question: How does the application of Newton’s Law of Universal Gravitation affect our times?		
Questions:	Notes: Universal Gravitation	
	Newton reasoned that there is a force of _____ between	
	every two objects in the universe.	
	He used this reasoning to explain everything from an apple falling to the orbit of	
	the _____ and the _____.	
	Previously, people thought that the physical rules in the sky were	
	_____ than the physical rules on earth.	
	Previous to Newton, what were some ways that humans explained what they	
	saw in the sky?	
	What are the factors affecting the attraction between two objects?	
Summary:		

Questions:	Notes: $F = Gm_1m_2/r^2$
	$m_1 = \text{mass 1}$ $m_2 = \text{mass 2}$
	$r =$ the center to center distance between the two masses
	G is the Universal Gravitational constant and has a value of 6.67×10^{-11}
	A 10 kg and a 15 kg object are 20 m apart. Calculate the gravitational force of attraction between the two.
	Even though, you have a force of attraction to every object in the universe, you do not notice this attraction all that often. Why?
Summary:	

Questions:	Notes: Calculate the weight of a 65 kg object by using $w = mg$
	Calculate the force of attraction a 65 kg object feels with the earth. The mass of
	the earth, 5.98×10^{24} kg. The radius of the earth is 6.38×10^6 m, use this as the
	value for r.
	The radius of a planet is 7.2×10^7 m. Its mass is 2.7×10^{27} kg. What is the
	gravitational force or weight felt by a 50 kg person on this planet?
	What is the acceleration due to gravity on this planet?
Summary:	

Questions:	Notes: If the space shuttle is flying 270,000 m above the surface of the earth,
	what gravitational force of attraction will a 60 kg person feel?
	What is the acceleration due to gravity where the space shuttle is located?
	How does the application of Newton's Law of Universal Gravitation affect our
	times?
Summary:	