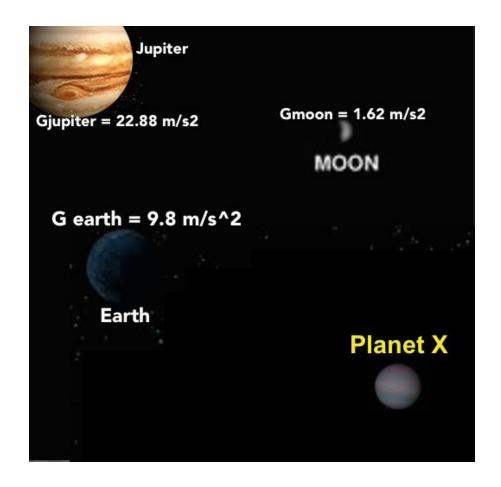
Booklet #53



Name: (5 minutes before the end of the class, I'll collect booklet #53).

Unit: Work, Energy & Power|| Topic: Finding the Acceleration of Gravity of Planet X || Date: 1/11/1

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Do now	1a. What is force? What are the forces around us?
	1b. What is gravity? Who discovered it?
	1b. A force of 1000 N stretches a spring with a Spring constant of 10000 N/m? Find the displacement.
	1d. Okay, now tell me what is the relationship between the displacement of Spring and the mass of the object hanging on the spring? Can you write an equation modeling this relationship?

Step # 1

1	Make a hypothesis
	"AMS Physics students have recently discovered a Planet which they named X (for lack of creativity). They want to make a trip to this new Planet X. So they need to find its acceleration of gravity. In order to do so, Mr. Bari, their physics teacher, asks them to make a hypothesis and test the hypothesis by following 14 steps. "
	H_0 = Null hypothesis
	$oxed{H_0}$

2	Take and organize data that will help you verify the relationship between the dis Spring & the mass of the object hanging on the spring.				
	Mass (Gram)		D (CM)		
	50 gram				
	100 gram				
	250 gram				
Step#	¹ 4:				
3	Clearly describe the	relationship that you no	tice.		
Step#	5:				
4	Write an equation m equation works for a	_	and define your variable (Make sure your		
Step#	6:				
5	Determine the masse	Determine the masses of the green, gold, and red cylinders			
			Mass of Planet X		
	Mass	D (cm)	Mass (Gram)		
	Green				

Gold

Red

Step # 7	7 :			
6	Now let's use only Spring # 3 with the stiffness on hard (Use the slider to do so)			
	Investigate the relationship bet hanging on the spring. Is it san	tween the displacement of a spr ne or different?	ing and the mass of the object	
	Mass	D (cm)	D (meter)	
	50 gram			
	100 grams			
	250 grams			
Step # 8	3:			
7	Organize the data you take and express this relationship in an equation, defining your variables including units and identifying which is dependent and which is independent. Make sure your equation works for all of your data! How is this equation different than the previous equation?			
Step # 9):			
8	Take and organize data that wi	ill help you analyze the relation	et's go to the Moon and Jupiter! nship between the displacement et the spring is on (We will do	
	Hang 50 grams onto Spring #	1:		
	Planet	Gravity (m/s^2)	D(m)	
	Earth			
	Moon			
	Jupiter			

Pla	net	Gravity (m/s^2)	D(m)
Earth			
Moon			
Jupiter			
Hang 250 grams	s onto Spring #	1:	
Pla		Gravity (m/s^2)	D(m)
Earth			
Moon			
Jupiter			
		ng: Clearly describe the relationand which is independent vari	
		ng: Clearly describe the relation and which is independent vari	
Identifying which	ch is dependent		able.
Identifying which	ch is dependent	and which is independent vari	able.
Identifying which is a second of the second	ch is dependent	and which is independent vari	able.
Identifying which is a second of the second	ch is dependent	and which is independent vari	able.

Step	12
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11	Determine the acceleration of gravity on planet X, showing the data you have taken and the calculations you have done.

Step # 13

12	Accept or reject the hypothesis?
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Step # 14 (Homework)

13	Is it possible to make a trip to Planet X based on its Acceleration of Gravity? Explain your answer using the data.