

Dtunname_____

[Science](#), [Physics](#)



dtunName_____ Home Challenge Lab 2- The force of Gravity Topics covered in this lab: The force of gravity Newton's Laws One of the topics we have discussed is acceleration, meaning that the velocity of the object under study was changing. What causes something to accelerate? In this lab you will investigate the forces that affect the motion of objects.

Gravity Materials: i♦± Something to toss (Please choose an object that will not break) Toss an object straight up into the air and catch it as it falls back down. Carefully watch the objects vertical position as a function of time. Repeat your toss enough times that you are sure that you understand the motion of the object. In order to answer the following questions, imagine that you were able to measure the distance of the object above your hands, the velocity of the object, and the acceleration of the object, all as a function of time. You may want to reference the power point lecture of the diagrams in your text to help answer these questions. Please give detailed answers in complete sentences. What is the velocity of the object at the very top of its path? Is the velocity of the object changing during the entire flight or just at certain times? Explain. What is the acceleration of the object at the very top of its path? Does the acceleration of the object change while it is in flight? no List all of the forces that are acting on the object while it is in flight. You may want to refer to your text for the following: Using the first grid provided on the following page, make a sketch of what you think the distance (above your hands) versus time graph would look like for the object. Using the second grid provided on the following page make a sketch of what you think the velocity versus time graph would look like for the object. Using the third grid provided on the following page make a sketch of what you think the

acceleration versus time graph would look like for the object. |||||

||||| Distance |||||

||||| Velocity |||||

||||| Time |||||

||||| Acceleration |||||

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