

Mackenzi Uber
Physics Pd: 7
Mr. Hanlon
Lab Report

Dear Casei,

In my physics class this semester we are working on learning about motion and how motion works. We recently finished a lab in class. The goal of this lab was to help us learn and better understand the properties of 2D motion based upon our lab results. Another goal of this lab was to determinate y-acceleration for a projectile. A projectile is any object that is projected into space by exertion of force.

The lab we did was we threw a dodgeball in the air in an up/out motion. The materials used to complete this lab included a dodgeball, an app on the classroom iPad called Video Physics (image one and two), a meter stick, and two people from my group. The Video Physics app allows us to record a video of a student throwing the ball in a certain direction and locate the position of the ball at a point of time. After that the app also helps us calculate the graphs. To complete this lab we took many steps. The first step we took was we had one person with the dodgeball ready to throw it and another person from the group at the opposite end horizontal of the person with the dodgeball (image three). As one person was getting set to throw the ball, I was to the side of them recording the motion with the Video Physics App. After that, we saved the video to the app and used a tool in the app that allows us to plot points of the position of the ball (image 4). Lastly we calculated the y vs x graph, x-position, y-position, x-velocity, and y-velocity graphs. The y vs x graph shows the position of the ball, which is the path the ball took. The x-motion graphs show the velocity of the ball is constant. The y-motion graphs show how the velocity of the ball changes at a rate of 9.8 m/s^2 (meter per second per second).



Image 1: This image is a picture of what the Video Physics App looks like.



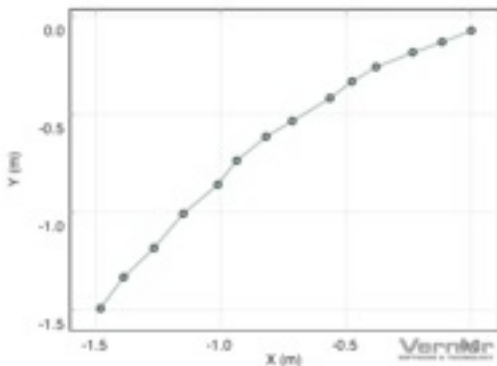
Image 2: This image is of the iPad we used in class to conduct the lab. What you see here is a picture of the screen of the iPad, on the screen is the initial set up of our lab. The white circle on the screen is the tool we used to plot the points of the balls path. The green lines shows the x and y axis of a graph.



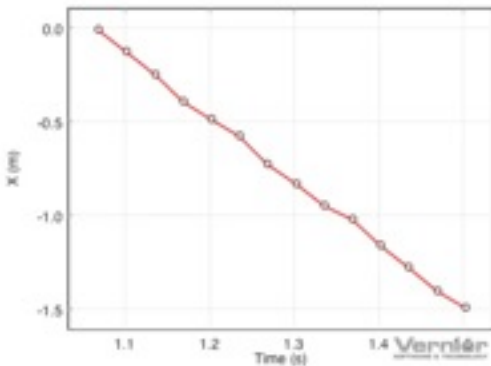
Image 3: This image is the set up we used to construct the lab. As you can see on the right hand side we have a student getting ready to throw the dodgeball in a direction we later on calculate the path of the ball. On the left we have another student waiting to catch the ball at the end. If you look closely you can see a meter stick between the two classmates.



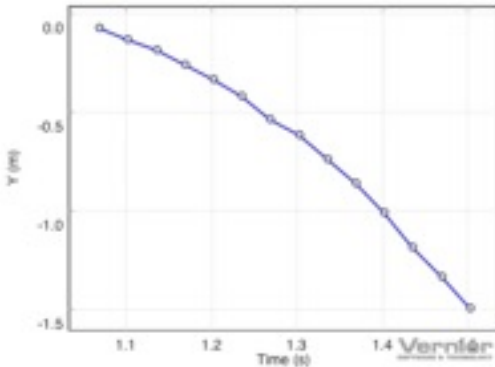
Image 4: This is what the screen looks like after the plots are pointed. The blue dots indicate the path the ball took once it was released from the student on the right's hand.



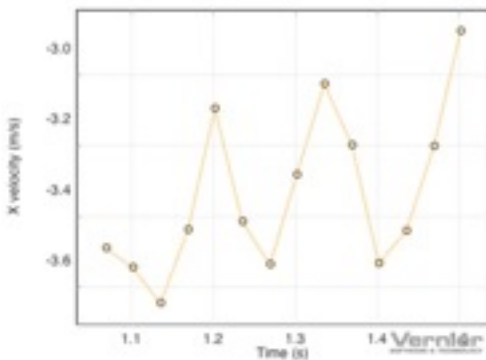
The first graph shown is the y-position vs x-position. This graph shows the path the ball took once released from the student on the right's hands. The numbers on the graph are the distance the ball took, we got these numbers by setting a scale before the graphs were constructed. Having the meter stick in the middle is helpful because of the distance could be off from recording the video.



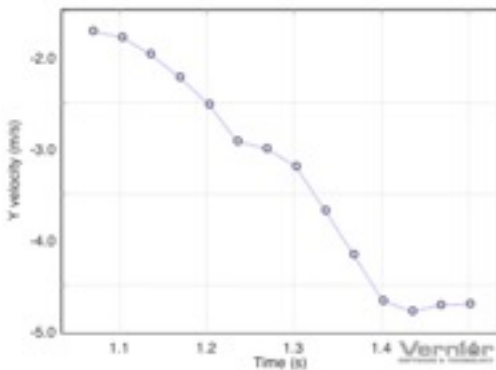
This graph shows only the x-motion of the graph. The constant line shown by this graph means the velocity of the ball is constant.



This graph is of the y-motion of the ball. This being said, this graph shows only the Y position of the ball or how high the ball traveled.



This graph indicates only the x-velocity. In case you have no clue what velocity is, velocity is the rate of change of the position of an object.



This last graph shows the velocity of the y-position of the ball. Similar to the one above but now focussing on just the y position.

That is it for this lab! I hope you learned something from physics by reading this report. For this particular lab we did not have any calculations because the Video Physics App gave us all the numbers and calculations needed.

Thank You,

Mackenzi Uber