

Lab 3-5: Hit the Bull's Eye

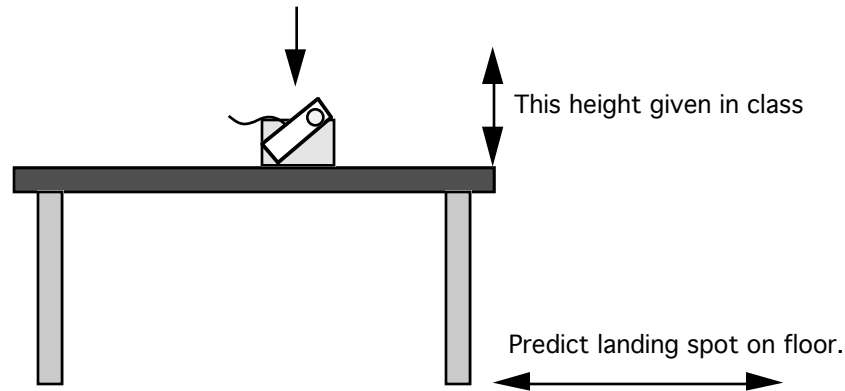
Purpose: To determine the initial speed of a projectile launched from a mini-launcher and then be able to shoot the projectile through a target at the end of the lab bench, and onto a target on the floor.

Materials: 1 mini-launcher 1 meter stick patience

Procedure:

1. Until the final testing of the projectile, the projectile must stay over your lab table. You may launch the projectile, but it must stay on/over the lab table.
2. Determine the initial speed of the projectile from the mini-launcher. It is up to you whether you wish to do 1, 2 or 3 clicks. It is up to you to determine a method for calculating the initial speed.
3. Do whatever testing and/or calculating you need to accomplish the following: Launch the projectile from the lab bench so that it passes through a small opening at a pre-given height on the edge of the lab table and lands on a target that you placed on the floor.
4. On a piece of whiteboard, neatly show the calculations you did to determine the launch speed and how you calculated the position of the landing spot. Be prepared to explain what you did and why you did it.
5. When you are ready, call your teacher. After satisfactorily explaining your calculations, you will get a target to tape to the floor. One try only; your grade is determined by how close you come to your target. (If the projectile passes through the opening, you earn a minimum of 10 points.)
6. If you are dissatisfied with your grade, you may try again. However, 2 points will be deducted from your final score (so the maximum you can get this way is 18/20, if you hit the target.) The higher score will be recorded. If there is not enough time in class to do this, you may come before or after school to do this.

Determine initial position and angle for launch.



Data:

Any data that you feel you need to take, write here. Keep it neat and organized.

Height of circular opening at end of lab bench: _____

Lab 3-5: Hit the Bull's Eye

Calculations:

Show any calculations you did to determine the initial speed of the projectile, and then show your calculations to determine where to place the mini-launcher, the initial launch angle and the target placement from the edge of the lab table.

Initial Speed of Projectile:

Path of Projectile: