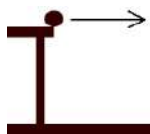# K9 Kannon Lab - Part I: Horizontal Launch

Name: _____

Class: _____

To launch the ball, you can pull the charging handle back 1, 2, 3, or 4 clicks. **Work must be shown for credit!**

For this lab you need to figure out the launch speed of the K9 Kannon for each of these click values without using a stopwatch or other timer.

Horizontal Launch: **Launch the K9 Kannon from a horizontal position.**

1. Describe in words how you could determine the launch speed of the K9 Kannon. What would you need to measure in order to find the launch speed of the K9 Kannon?

We need to measure:	This is how we would use those measurements:

2. Now find the launch speed of the K9 Kannon.

Team # _____   _____ clicks

V = _____ m/s

3. How far away must a target be placed on the floor if the K9 Kannon is launched horizontally (at your number of clicks) from a height of 1.87 m?

K9 Kannon Lab - Part II: Angle Launch

Now that you know the launch speed of the K-9 cannon, you will use that speed to fire at a target from an angle.

 # clicks(should be the same as part I): _____   Launch Speed: _____ m/s

Angle Launch: Launch the K9 Kannon from the front lab table (_____m high) at an angle of _____ °

Your task is to hit a target on the floor. Each team will have a different angle to fire at, and will need to determine where to place the target so the ball hits it.

Horizontal	**Vertical**
Δx = _____ m	V_{oy} = _____ m/s
V_x = _____ m/s	V = _____ m/s
T = _____ s	a = _____ m/s²
	Δy = _____ m
Equation used to Solve for Δx:	T = _____ s
	Equation used to Solve for T:
We should place the target_____m away from the cannon	