Elective 2: Additional Lab Practicum
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Lab Topic:	Projectile Motion
PhET Lab: (Original)	Experimental Design: Projectile Motion (Original Document)
Lab Overview:	This teacher-guided activity allows the students to use a projectile motion simulator to investigate the factors that affect a projectile's trajectory, such as angle, height, initial speed, and air resistance. The students have many available options such as adjusting the height and/or launching angle of a cannon, moving the target, and changing the projectile parameters to explore projectile motion.
PhET Lab: (Student Work)	Experimental Design: Projectile Motion (Student Work Document) ➔ Located in Dropbox
Reflection:	This activity connects to physics learning outcomes by using a projectile motion simulation to investigate how each parameter (initial height, initial angle, initial speed, mass, diameter, and altitude) affects the trajectory of an object. The students make their own prediction about how varying the initial conditions will affect the projectile's path, test their hypothesis through the simulation, and then provide an explanation for their prediction. What I like most about this lab activity is that the parameters are so versatile and adaptable for any level of inquiry (K-12). This simulation also has the capabilities to explore how velocity and acceleration are affected by air resistance along with investigating the influence of gravity. At the middle school level this simulation exposes my students to projectile motion, independent and dependent variables, and an introduction to functions (linear and exponential) in terms of a context.