

Quadratic Functions for Projectile Motion Day 1



= Stop and talk

1. Make a projectile path that hits the target. (Don't forget units!)

Initial Height	Initial Speed
Launch Angle	Object

2. Make a projectile path that has a negative launch angle and still hits the target.

Initial Height	Initial Speed
Launch Angle	Object

3. Make a projectile path that reaches a height of at least 14 m high and still hits the target.

Initial Height	Initial Speed
Launch Angle	Object



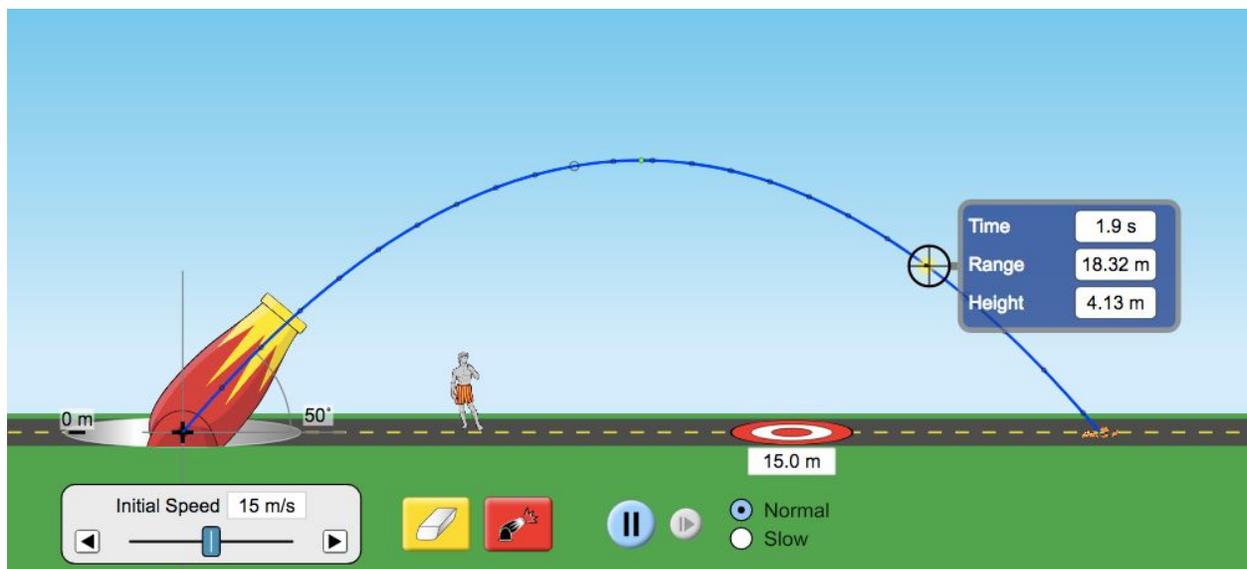
4. Now that you have played around with the simulation, summarize how the initial conditions affect the height and distance.

Initial Condition	Effect on Distance		Effect on Height	
Increase the initial height	<input type="checkbox"/> increase	<input type="checkbox"/> decrease	<input type="checkbox"/> increase	<input type="checkbox"/> decrease
Increase the initial speed	<input type="checkbox"/> increase	<input type="checkbox"/> decrease	<input type="checkbox"/> increase	<input type="checkbox"/> decrease
Increase the launch angle	<input type="checkbox"/> increase	<input type="checkbox"/> decrease	<input type="checkbox"/> increase	<input type="checkbox"/> decrease
Change the object	<input type="checkbox"/> increase	<input type="checkbox"/> decrease	<input type="checkbox"/> increase	<input type="checkbox"/> decrease

5. Which of the initial conditions has no effect on the distance and height? Why do you think that might be?



6. Answer the following questions about the function.



- Is this function linear or nonlinear? How do you know?
- Identify the x-intercept(s) on the graph. Estimate the coordinates. Describe what information the x-intercept(s) give you about the scenario.
- Identify the y-intercept(s) on the graph. Estimate the coordinates. Describe what information the y-intercept(s) give you about the scenario.
- Does this function have a minimum, maximum, or both? How do you know? Identify it/them on the graph.
- Identify where the function is positive or negative on the graph. How do you know?
- Identify where the function is increasing or decreasing on the graph. How do you know?
- Identify the vertex on the graph and write its coordinates. Describe what information the vertex gives you about the scenario.

