

Name: _____

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Lab #19: Projectile Motion PhET Simulations



Procedure:

- Google search "PhET Projectiles"
- Run the PhET Simulations → Play → Motion → Projectile Motion
- **Run Now!**
- The cannon can be moved to add or remove initial Y position and X position.
- The cannon can be pivoted to change the firing angle, θ .
- The tape measure can be moved and dragged to measure range to target.
- To fire the cannon, **Fire!**
- To erase the projectile's path, **Erase!**

Effect of Angle on a projectile

Be sure **air resistance is off** and spend some time firing various projectiles.

- Set the initial speed to a value between 10-15m/s. Choose your favorite projectile.
- Find the range of the projectile at various angles.

Angle	Range (m)	Time of flight (s)
30		
40		
50		
60		
70		
80		
90		

Hitting a target by guessing:

- Measure the distance from the cannon to the target using the tape measure.
- Move the target to 21.0 m from the cannon.
- You only have 3 attempts to hit the target by changing the firing angle and initial velocity.

Guess:

1. Angle _____ initial V = _____ hit target (y/n): _____
2. Angle _____ initial V = _____ hit target (y/n): _____
3. Angle _____ initial V = _____ hit target (y/n): _____

Answer Key To Projectile Simulation Lab Activity

Léo Pomar



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