



Project Lab – Proposal Form

PROJECT PROPOSAL

The project proposal is worth 10 points (10% of your project grade).

Your proposal should be no more than two pages. The proposal should be submitted by the date that is listed on the course calendar. At a minimum, your project proposal must address the following key ideas:

Goal: Briefly explain the phenomenon you plan to investigate. Clearly state the physics question that you plan to answer with your experiment.

Experimental Design: Describe the experiment design.

- What quantities will you measure?
- How will you make the measurements?

Safety: Your proposal must include a specific discussion of safety. Identify the possible safety concerns that might be associated with your experiment. Specifically state the protocols, safety equipment, *etc.* that you will use to minimize the chance of injury.

Apparatus: List the equipment and tools that you will need for your experimental design. This list is important so that we can help provide all of the tools that you need for your experiment.

PAST PROJECTS

Some examples of past projects include:

- Measuring the Propagation Speed of a Wave of Dominos
- Measuring the Properties of a Rocket-Propelled Go-Kart
- Conservation of Energy in a Loop-the-Loop Apparatus
- Experimentally Determining the Position of the Accelerometer in a Phone Using Uniform Circular Motion
- Damped Simple Harmonic Oscillator
- Measuring the Acceleration of a Yo-Yo
- Measuring the Linearity of Rubber Band Sprint Force

- Measuring the Dynamics of a Frisbee
- Determining the Accuracy of the “Rocket Equation” with Water Rockets.
- Measuring Coefficients of Drag Using a Home-Made Wind Tunnel
- Using Air Pressure to Model the Dare-devil Drop (Human Pendulum) Ride
- Tracking and predicting the path of a boomerang.
- Energy conservation in a spring-powered projectile launcher.
- Measuring the Rotational Frequency of a Gyroscope.
- Friction between interwoven pages of a post-it-note stack.
- Analysis of projectile motion in irregularly shaped objects.
- Correlation between initial velocity and impulse during a collision.
- Analysis of a baseball before and after contact with a bat.
- Measuring physical parameters in Angry Birds.
- Measuring the maximum velocities of rental scooters.
- Measuring the force exerted by a discharging fire extinguisher.
- Measuring the parameters of a coupled pendulum system.
- Understanding the coefficient of static friction.
- Conservation of energy in a simple pendulum system.
- Stationary waves and measuring the speed of sound.