# Racquetball Launcher Project

## Project Requirements

1. Students must create a device to launch a racquetball at a target at least 10 feet away. This racquetball will be provided by Mr. Jones. The launcher must be powered entirely by mechanical energy.

2. Launchers must be able to operate sitting on the ground. Launchers may have a maximum footprint of 24” x 16”.

3. Each student must prepare a 1-2 page written report and blueprints with their design. The report should explain the design and construction process and choices of materials. Blueprints should include dimensions and at least two views.

4. Work on this project must be the students’. You may receive assistance, but you must give credit in your paper; and the majority of the design and work must be done by the student.

## Other Things to Consider

- What designs will allow you to make the best use of the force to accurately launch the ball at the target?

- Will your launcher compete for distance, accuracy, or both?

- How will your launcher be able to adapt to hit targets and different ranges?

- How can concepts from Newton’s Laws of Motion help you with the design of your launcher?

- What resources can you use to help you design and build your launcher?

- Keep a list of all sources that you use during this project (internet, books, people, etc.) This information will need to be included with your paper!

The projectile launcher competition will take place the week of April 4. Prizes will be awarded in the following categories:

1. Accuracy - This award will be given for the launcher that is able to most accurately hit a target from 10 feet away. Each student or team will have the opportunity to launch 5 balls at the target. Those who score the most hits will advance to the next round. In each round a small target will be used until there is a winner.

2. Distance - This award will be given for the launcher that can hit a target from the greatest distance. Each student or team will have up to 5 tries to hit the target and advance to the next round. Only 1 ball must hit the target to advance. Targets will begin 10 feet away and will be moved back 5 additional feet each round.

There will be one award in each of the two categories given for individual designs and one award from each category given to team designs. Each design can be entered in both competitions if students wish, but only entry in one of the two is required. Prizes will be awarded at the conclusion of the competition.