The Challenge

Have fun storming the castle!
Redesign your launcher to knock down a castle wall - as quickly as possible!

Before You Start: Make sure you have built a launcher for use on this challenge.
Documents & Supplies at: teachergeek.com

Siege the Castle

1. Adjust your angle and trigger design.
2. Aim. Take as many shots as possible in the span of three minutes to knock down the castle wall.
3. Record your results on an Engineering Notebook Sheet.

Constraints

Challenge Supplies
Launcher (from Build Guide), protractor, castle/wall material, ruler, tape, stop-watch, ping pong balls

Difficulty: Easy-Medium

Teacher’s Note
Find more information on setting up targets and running this challenge, in the Launcher Classroom Overview.

Allowable Materials
- TeacherGeek Components
- Found & Recycling Bin
- Teacher Approved
- Non-Hazardous

Ground Rules:
- Launch from behind the starting line
- Wall must fall only from projectiles

Time Limit:
Fill in how much time you have
The time from building and re-designing your launcher to the start of the competition.

Medieval Catapults
Use cups or cards to make a wall.
Design #: ________

Name: ___________________________________________ Date: ________

1. What problem do you want your design (launcher) to solve?

2. Draw your new design.  
   **Tip:** think of the trigger, launcher angle, amount of rubber bands, etc.

3. Build it.
Test it.

Mark your targets’ distance on the graph with a vertical line.

Record the distance of at least three launches for each design or angle you test on the graph below.

Evaluate it.

How precise (consistent) were your results? Does your data look grouped together in one area [ ], or does it look scattered [ ]?

How accurate (close to the ‘true’ value) were your results? How close is your data to the line indicating the targets’ distance?

How can your design be improved?

This will become your next problem to solve.

Get another engineering notebook page. Solve the new problem.