

# **Catapult Contest Official Rules Guide and Information**

## **Da Vinci Exhibit – QCESC**

**Date/Time:** Saturday, February 16, 2008, Noon to 5:00 PM (or earlier if contest is completed).

12:00 – 12:30      Check in/Registration

12:30 – 12:40      Announcements and Rules Discussion

12:40 – 01:30 or until complete    (All teams will get 5 minutes each to practice)

01:30 – Until compete

**Point of Contact:** for further information or questions contact: Craig Gehrels: phone: (309) 782-4927 or preferably e-mail at : craig.d.gehrels@us.army.mil.

**Objective:** Design, construct, and demonstrate a catapult to hurl a ping pong ball at a target 30 feet away with the best accuracy.

Note: The catapults shall be designed and built prior to the contest.

**Catapult Categories):** There will be two competitive categories judged during the event (if necessary):

1. Custom Design by teams.
2. Purchased Kit Design and Materials available from commercial companies (see below link).

It is understood that catapult kits are available to purchase. It is the intent of the competition to have teams design and construct the catapult. However, if someone purchases a kit for the competition it will be accepted since building the kit should still help teach the engineering principles of a catapult.

**Teams:** Four persons per team.

### **Design Parameters:**

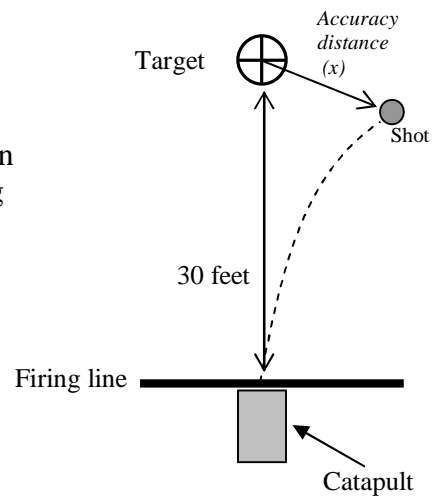
1. **Materials:** Any building material (wood, metal, plastic, cardboard).
2. **Energy:** Energy must be derived from human power. No electricity or air is to be used in any way (i.e., batteries, portable generators, or air cylinders).
3. **Size:** The catapult must fit in a 2×2×2 feet box.
4. **Projectile:** The projectile will be a ping pong ball provided at the competition.

**Launch Process:**

1. All will have five minutes to practice at the firing line before competing.
2. All launchers will fire from the same location (firing line).
3. The launcher must be moved to the firing line by hand.
4. The catapult must sit on the floor. No hand held types.
5. Each team will have a maximum of ten minutes total to take five shots. The clock will start after the first shot is taken.
6. The firer will await the Judges notification to commence firing. The firer will announce “Fire” each time a shot is taken.
7. After all five shots are taken; the team will move its catapult back to the staging area to await competition completion.

**Scoring/Judging:**

1. Five shots will be taken. The final score is the average distance (x) away from the target or shot accuracy as shown in Figure 1. The target will be 30 feet away from the firing line.
2. Tie: In the event of a tie, the lightest catapult will be declared the winner.
3. Judges have the right to disqualify those teams for unsportsmanlike conduct.
4. All decisions by the Judges are final.



**Figure 1.** Firing line and target setup.

**Safety:**

1. **Designs considered unsafe by the Judges shall not be permitted to compete.**
2. The Judges will stop any team whose actions or catapult poses a threat to the safety of others.
3. Eye protection (safety glasses) will be worn when firing.

**Catapult Information:** There are two good sites concerning catapult history and design information listed below:

1. History Faire Catapult Contest Website: <http://www.macarthurschool.org/catapults.html>. It contains background history and design principles.
2. Catapults.info Website: <http://www.catapults.info/>. This site is an excellent site containing historical and design information regarding the different types of catapults. It also contains links to catapult kits that can be purchased and design plans and books.