TENNIS BALL CATAPULT

Description:

Students will build and calibrate their own free-standing (not hand held) trajectory device that must be capable of "lobbing" a tennis ball at a target placed between 2 and 5 meters.

Number of Participants: 2

Approximate Time: 30 minutes

The Competition:

1. Each team will bring their own homemade catapult and their own tennis balls to the competition. (Please print your school's name prominently on the catapult.) If the team fails to bring their own tennis balls, they may be supplied by the judge.

2. A data chart showing the launching characteristics of the catapult (using various settings) will be required for the competition.

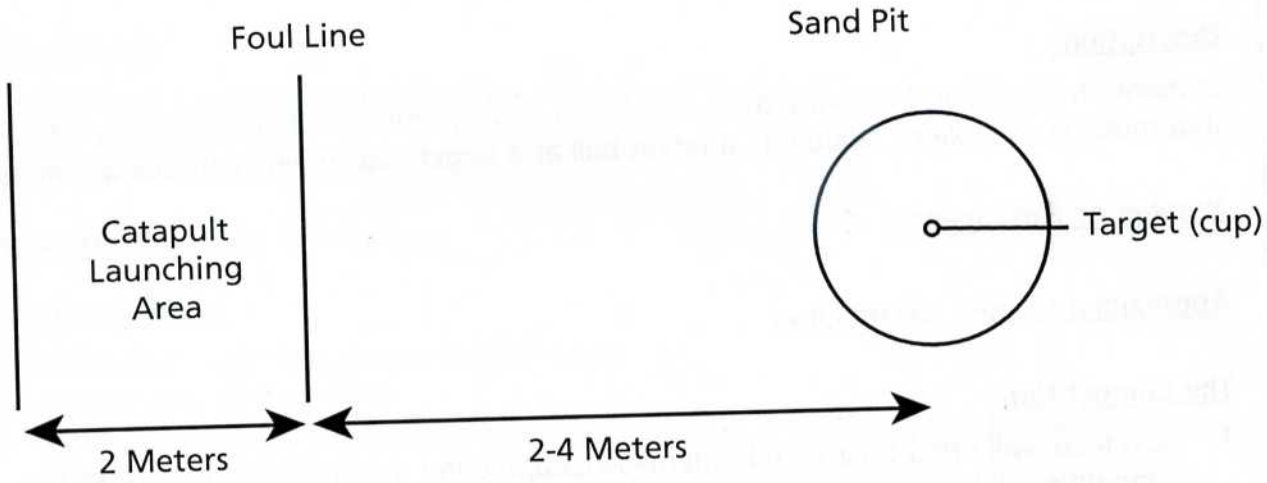
3. Launch force must be provided by gravity or elastic solids (such as springs, rubber bands, etc.). The last point on the device touched by the tennis ball may not be more than 50 cm above the ground before, during or after starting.

4. Each device should be designed and built by the students (adult construction assistance is OK). Each device should be designed to operate safely at all times. No points will be awarded for design.

5. The device will sit on a level area of ground and fire at the target area that will also be at ground level. The target area will be a sand pit of at least 1 meter in diameter (e.g., a child's plastic wading pool). A small object level with the sand will mark the center.

6. The distance from the "foul line" to the center of the target will be announced at the start of the competition. Students may place their catapult at any point behind the foul line up to 2 meters-see diagram on next page.

7. The event could take place outside.



Scoring:

1. Each team will have a one-shot practice round after which they will each shoot at the target three times. The first two shots will count toward the score. The third shot will be used only in case of a tie. The distance from the target will be measured after each shot, including the practice shot, and announced to the team to allow them to make adjustments based upon their data chart. (Refer to Rule No. 3.) The cumulative distance after two shots will be the team's score. The smallest score wins.

2. The distance from the center of the target will be measured to the tennis ball's initial point of impact as determined by the judge. Tennis balls landing outside of the sand pit area will also be measured according to the initial point of impact as determined by the judge. Tennis balls hitting the target on initial impact will receive a score of zero.

3. No tennis balls should be shot before or during the catapult event except during the specified practice round or actual competition. Each team must bring their catapult to the competition site at a time posted at the registration table, and leave it there for safekeeping until their turn. This rule is meant to provide safety and fairness so teams will not be practicing during the day of the competition after the distance is announced.