

# **PUMKIN CHUNKIN PALOOZA**

**2021  
TREBUCHET CONTEST**

---

**RULES & REGULATIONS**

---



**September 25, 2021**

# **SAFETY**

Remember there is an element of danger with creating and operating a siege machine. Use adult supervision.

Trebuchet Contest Rules:

1. Distance
2. Accuracy

## **Event Description**

Accurately launch a projectile into a target area using only the energy from a falling counterweight.

### **Trebuchet Construction Guidelines:**

- Arm - 10 feet in total arm length (excludes sling hook – maximum 6")
- Projectile - 8lb – 10lb Pumpkins
- Counterweight - 1000 Pounds maximum.
- Maximum Height: 12ft with arm in stored position.

Teams will be competing in both Distance and Accuracy contest categories. Current Distance Record is 383' by Versailles Middle School (2018). MAX measurable is 450'

Note: Floating Arm Trebuchets (FAT) are prohibited from competition. If you have a (FAT) Trebuchet please bring it to Pumpkin Chunkin Palooza to discuss the physics behind the trebuchet.

Rules:

1. No energy can be stored in deformation of components. That means no springs, rubber bands or flexible arms. The counterweight must be attached, not looped over, the end of the arm (or in close proximity).
2. The Trebuchets will be inspected for safety. Any parts that are unnecessarily loose must be tightened. No parts of the Trebuchet other than the projectile are allowed to become completely disconnected from the trebuchet (A partial disconnect is necessary in order to release the projectile). Any Trebuchet deemed to be unsafe will be disqualified.
3. Counterweights must not come free during competition. If a counterweight falls off, the trebuchet operator must operate with the remaining counterweights. If the trebuchet becomes inoperable due to a loss of all counterweights, it must be declared lost and removed from the competition.
4. Qualification at check-in does not represent permanent qualification. Trebuchets are subject to random checks at any time. This is done to prevent a) illegal modifications to trebuchets, b) overcome deficiencies in the volunteer qualifiers' judgment, and c) ensure safety.

It is your responsibility to make sure that you understand the rules, and that your trebuchets meet the requirements. Our failure to 'catch' illegal trebuchets before the tournament does not take away our right and responsibility to correct such mistakes later.

5. Your trebuchet must be triggered remotely from outside the launch area (at least 6 feet).

6. All trebuchets must be brought to the contest assembled and tested beforehand. The trebuchet must appear and be demonstrably safe to our judges in a test launch prior to the contest. Any misfire or failure must not be capable of hitting the bystanders or the operator in any way.

### **Contest #1: Distance**

Rules:

1. Each trebuchet will be given 3 launches and only the longest of the 3 launches will count toward the final standings.
2. Trebuchets will be lined up with the pivot point of the arm in a specific location marked in each teams throwing area.
3. All distance measurements will be measured from the pivot point of the arm to the point of first impact.
4. The projectiles will be provided by the event officials. The projectiles should weigh 8 pounds, depending on our supplier's availability, and are roughly the size and weight of a bowling ball.
5. In the event of a tie, a single launch from each tying trebuchet will determine the winner by measuring the longest hurl.

### **Contest #2: Accuracy**

The goal of this contest is to have a trebuchet that can shoot reliably and accurately. You will launch a projectile (provided by event officials - see above) repeatedly to a designated target.

Rules:

1. A circular target will be placed at 75' and 150' from the pivot point of the arm.
2. Each trebuchet will be given 3 launches at each target distance.
3. Only the closest of the 3 launches at each target distance will count for scoring.
4. In the event of a tie, without any team landing inside the target, the tying teams will each get one additional throw and the closest to the target will receive the top score.

## **Competition Time**

Each team will be given a single 25-minute time slot to complete all of their throws for distance and both accuracy contests. If a team is unable to complete all of their throws in the allocated time, then only the completed throws will be scored. Each team will receive a separate 5-minute time slot to throw one additional pumpkin as their “team choice”. Each team must designate which contest they are trying to improve upon (distance, 75’ accuracy, or 150’ accuracy). Only the best throw of either the original attempt or the team choice will be scored.

## **Setup and Testing**

Pumkin Chunkin will provide each team with a total of 15 pumpkins on the day of the competition. There will be a designated testing time period on Saturday morning of the event. 10 pumpkins will be needed for the competition and the additional pumpkins can be used for testing. Each trebuchet will need to be fully setup and functional by the end of the designated testing time.

## **Additional Information**

Contact Andrew Renken – 573-207-4259 or [awrlaw@gmail.com](mailto:awrlaw@gmail.com)

## **Websites to Learn More About Hurling Things:**

[www.trebuchet.com](http://www.trebuchet.com) (plans, kits, resources)

[www.algobeautytreb.com](http://www.algobeautytreb.com) (the algorithmic beauty of the trebuchet)

[www.physics.siu.edu/trebuchet.htm](http://www.physics.siu.edu/trebuchet.htm) (Southern Illinois University Department of Physics)

[www.cs.wright.edu/trebuchet](http://www.cs.wright.edu/trebuchet) (Wright State University Trebuchet Contest 4 years of hurling)

The information on these sites is for reference purposes only.

## **Remember there is an element of risk with creating Medieval Siege Weapons.**

In 2003 the King Arthur Trebuchet set a new world record of hurling an approximately 10-pound pumpkin 1,150.34 feet.