

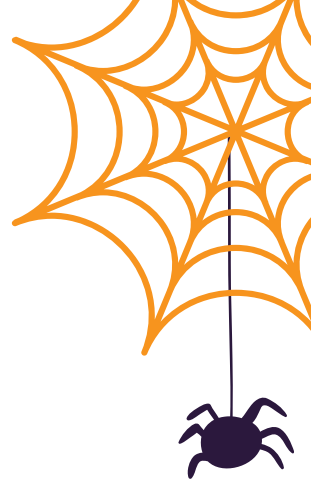


Towamencin Special Events Presents

PUMPKIN DERBY

THE PUMPKIN DERBY WILL TAKE PLACE AT
FISCHER'S PARK ON SATURDAY, OCTOBER 4TH
FROM 2:00-4:00 PM.

COST: \$25 PER PUMPKIN DERBY KIT
(COST DOES NOT INCLUDE PUMPKIN OR DECORATIONS)



NOTE: PUMPKIN DERBY CARS MUST BE ASSEMBLED PRIOR TO THE EVENT

PUMPKIN DERBY RULES:

- Pumpkin cars must be constructed using a real pumpkin (weight limit 20 lbs).
- Pumpkins may be carved or used whole. TIP: Pumpkins should not be carved or drilled too early to prevent rotting.
- While the pumpkin may be hollowed out, it must retain its shape. TIP: Pumpkin car should be kept as cool as possible prior to check-in.
- There are no age requirements to enter the Pumpkin Derby.
- The axles must penetrate the pumpkin and support it. The challenge is to build the fastest racing pumpkin with two independent axles. Pumpkin cars with perfectly parallel axles will have a better chance of traveling straight down the track.
- The use of a solid base with affixed wheels is prohibited - this includes skateboards, roller skates, toy trucks and/or other similar bases.
- Pumpkin cars must be powered by gravity and the slope of the track alone. No fans, batteries, motors, rockets, etc. allowed, and no pushing of derby cars.



PUMPKIN DERBY KIT INCLUDES:

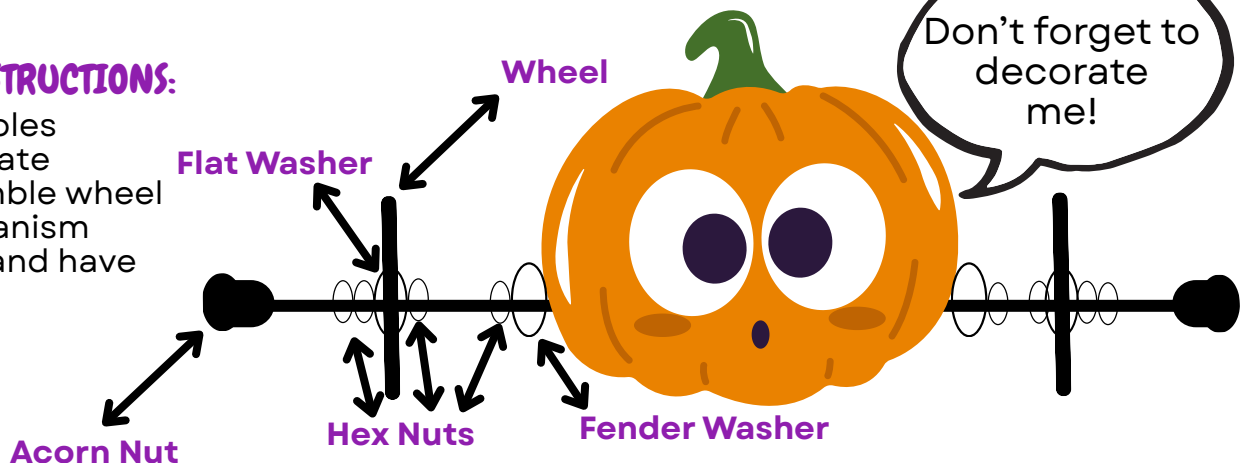
- 4 acorn nuts
- 16 hex nuts
- 8 flat washers (small)
- 4 fender washers (large)
- 4 wheels
- 2 axle

PUMPKIN DERBY KIT DOES NOT INCLUDE:

- 1 medium pumpkin (10-20 lbs)
- (2) ½ inch wrenches
- Drill with a 5/16 inch bit or other hole piercing item
- Decorations

QUICK INSTRUCTIONS:

- Drill holes
- Decorate
- Assemble wheel mechanism
- Race and have fun!



In-Depth Instructions

Step 1: Punching Axle Holes

You want two parallel axles. Drill straight through pumpkin with a long 5/16" drill bit starting on one side and exiting through the opposite side. Repeat for second axle. TIP: It is easier to decorate your pumpkin prior to putting the wheels on. Just remember to keep the bottom of the pumpkin free of any decorations. Make sure to place axles high enough so the pumpkin clears the ground. For example, if you're making a Mummy Derby Racer, don't wrap gauze around the part where you will punch the axle holes.

Step 2: Inserting the Axles

Feed the axles through the path you have just drilled. If the threaded rod gets stuck, poke the drill bit through again to clear the path. You need to be careful with the threaded rod. The threads can easily bend and then it will be impossible to get a hex nut to go on smoothly. Don't hammer the threaded rod through the pumpkin or knock it on the ground to help feed it through. If you absolutely have to give the rods a tap, first screw an acorn nut on the end. Remember, pumpkins vary greatly in size and shape and will not be perfect in terms of weight distribution or dimensions. Despite your best efforts, it may not go straight. It can be challenging to get the axles on perfectly parallel, but worthwhile in the long run.

Step 3: Centering the Pumpkin

After a few trips down the racetrack, you may find that your pumpkin will slip on the axle and become off center. This often happens during some type of crash. To avoid this problem, thread one fender washer and one hex nut on each axle. The placement of the fender washers should be snug against the pumpkin with the hex nut anchoring the washer in place of the axle. While this step is not necessary, it will help keep your pumpkin centered and keep your axles parallel (although this discussed at length in Step 6). TIP: Do a check of the axles to ensure they are straight before each race.

Step 4: Attaching the Wheels

Place nuts and washers on the threaded rod in this order:

1. (1) Fender Washer (optional, as discussed in Step 3)
2. (1) Hex Nut (optional, as discussed in Step 3)
3. (1) Hex Nut
4. (1) Flat Washer
5. (1) Wheel
6. (1) Flat Washer
7. (2) Hex Nuts
8. (1) Acorn Nut

Make sure that the acorn nut has enough room to be fully screwed onto the threaded rod. The purpose for the acorn nut is to protect you from scratches and cuts from the end of the threaded rod. Repeat this step for the remaining three wheels.

Now that you have all the pieces on the threaded rod, it is time to secure the hex nuts. You will need to create a lock nut. Without a lock nut, the hex nuts will continue to rotate on the threaded rod as your pumpkin goes down the track and possibly cause your wheels to lock up.

Step 5: Securing the Lock Nut

To create the lock nut, simply rotate two hex nuts onto each other. This is the step where you will use the two ½ inch wrenches. You will have four points on the two axles where you will need to make lock nuts: one on the outer side of each wheel.

Place one wrench over one hex nut and the other wrench over the second hex nut. You will essentially be rotating one hex nut to the right and the other to the left. This will give you a tight joint that you will not be able to move by hand. It is important that after the lock nuts are tightened there is enough room for the wheels to rotate freely, but not so much room that they wobble. To avoid this problem, insert a fender washer between the wheel and lock nut, then rotate the two hex nuts back onto the flat washer and make the lock nut joint. When you pull out the fender washer, you will have just enough room for the wheels to move unobstructed and without wobbling.

Step 6: Test Run and Troubleshooting

Make sure you do a test run of your Pumpkin Race Car! This is the only way to see what kind of adjustments you may need to make. A sloped driveway is a great place to practice. The following are common problems:

- *Pumpkin car rubs on the ground:* If the pumpkin hangs too low and is rubbing on the ground, you may need to shave some off. Bumps and imperfections in the road may also cause a pumpkin to hit the ground as it races. Make sure you have good clearance.
- *Pumpkin car runs slow or does not move:* Check to make sure all wheels are spinning freely and not wobbling.
- *Pumpkin car veers off the course:* Your pumpkin may tend to veer either left or right. Here are a few tips to help keep your pumpkin on a straight course:
 - Are all wheels spinning freely? Check to make sure that the wheels are spinning freely and equally. If a left side wheel is stuck, the rotation of the right-side wheels will cause the pumpkin to sharply veer to the left.
 - Is the pumpkin centered on the axles? If your pumpkin appears to be heavier on one side, you may need to adjust its placement on the axles.
 - Are the axles really parallel? The most likely cause of veering is that your axles are not parallel. Stated another way, the distance between the left side wheels or axles is different from the distance between the right-side wheels or axles.

Step 7: Race!

You've done everything you can to make your pumpkin race car a star, so let the race begin! Good Luck!

